# Handheld GPS Connection Kit

# Accessory Manual

# Thank You!

Thank you for choosing Humminbird®, America's #1 name in fishfinders. Humminbird® has built its reputation by designing and manufacturing top-quality, thoroughly reliable marine equipment. Genuine Humminbird® accessories offer the opportunity to upgrade and expand the capabilities of your Humminbird® product. Your Humminbird® is designed for trouble-free use in even the harshest marine environment. In the unlikely event that your Humminbird® does require repairs, we offer an exclusive Service Policy - free of charge during the first year after purchase, and available at a reasonable rate after the one-year period. For complete details, see the Warranty section included in this manual. We encourage you to read this manual carefully in order to get full benefit from your Humminbird® accessory.

Contact our Customer Resource Center at either **1-800-633-1468** or visit our website at **www.humminbird.com**.

*WARNING! This device should not be used as a navigational aid to prevent collision, grounding, boat damage, or personal injury. When the boat is moving, water depth may change too quickly to allow time for you to react. Always operate the boat at very slow speeds if you suspect shallow water or submerged objects.*

*WARNING! Disassembly and repair of this electronic unit should only be performed by authorized service personnel. Any modification of the serial number or attempt to repair the original equipment or accessories by unauthorized individuals will void the warranty. Handling and/or opening this unit may result in exposure to lead, in the form of solder.*

*WARNING! This product contains lead, a chemical known to the state of California to cause cancer, birth defects and other reproductive harm.*

*NOTE: Some features discussed in this manual require a separate purchase, and some features are only available on international models. Every effort has been made to clearly identify those features. Please read the manual carefully in order to understand the full capabilities of your model.*

*NOTE: Illustrations in this manual may not look the same as your product, but your unit will function in the same way.*

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*NOTE: Entries in this Table of Contents which list (International Only) are only available on products sold outside of the US and Canada by our authorized International Distributors. To obtain a list of authorized International Distributors, please visit our website at **www.humminbird.com** or contact our Customer Resource Center at **1-800-633-1468** to locate the distributor nearest you.*

*NOTE: Entries in this Table of Contents which list (with PC Connect Cable Only) require the purchase of a separate accessory. You can visit our website at **www.humminbird.com** to order these accessories online or contact our Customer Resource Center at **1-800-633-1468**.*

# How GPS Works

Your Fishing System uses GPS and sonar to determine your position, display it on a grid, and provide detailed underwater information. The Global Positioning System (GPS) is a satellite navigation system designed and maintained by the U.S. Department of Defense. GPS was originally intended for military use; however, civilians may also take advantage of its highly accurate position capabilities, typically within +/- 10 meters, depending on conditions. This means that 95% of the time, the GPS receiver will read a location within 10 meters of your actual position. Some GPS Receivers also use information from WAAS (the Wide Area Augmentation System), EGNOS (the European Geostationary Navigation Overlay Service), and MSAS (the MTSAT Satellite Augmentation System) satellites if they are available in your area.



GPS uses a constellation of satellites that continually send radio signals to the earth. Your present position is determined by receiving signals from satellites and measuring the distance from the satellites.

All satellites broadcast a uniquely coded signal once per second at exactly the same time. The GPS receiver on your boat receives signals from satellites that are visible to it. Based on time differences between each received signal, the GPS receiver determines its distance to each satellite. With distances known, the GPS receiver mathematically triangulates its own position. With once per second updates, the GPS receiver then calculates its velocity and bearing.

The following GPS functionality is currently supported by the Fishing System when it is connected to a GPS receiver:

- View current position
- View current track (breadcrumb trail)
- View precision speed and heading from your GPS receiver
- Save tracks and waypoints
- Travel a route and navigate from one waypoint to the next.

# Connecting a Handheld GPS Receiver to the Fishing System

Humminbird® has designed two different direct-connect cables to fit the most common GPS Receiver configurations. In case neither of the two direct-connect cables fit your configuration, we also provide a cable that can connect your Handheld GPS Receiver to your Fishing System control head via an additional NMEA data cable which you must purchase from your Handheld GPS Receiver manufacturer.

The Humminbird cable part numbers that are compatible with your Handheld GPS Receiver are shown in the chart below.

| Your Handheld GPS | | Our Cable Part # | Your Handheld GPS | | Our Cable Part # |
|---|---|---|---|---|---|
| Garmin | GPS V | AS HHGAR082 | | GPS III | AS HHGAR082 |
| | GPS 12XL | AS HHGAR082 | | GPS III Pilot | AS HHGAR082 |
| | GPSMAP 60 | AS HHGAR082 | | GPS III Plus | AS HHGAR082 |
| | GPSMAP 60Cx | AS HHGAR082 | Magellan | Meridian | AS HHMAG344 |
| | GPSMAP 60CSx | AS HHGAR082 | | Sport Trak | AS HHMAG344 |
| | GPS 72 | AS HHGAR082 | Garmin | eTrex | AS-HHGPS* |
| | GPS 76 | AS HHGAR082 | | eTrex Summit | AS-HHGPS* |
| | GPS 76S | AS HHGAR082 | | eTrex Legend | AS-HHGPS* |
| | GPSMAP 76 | AS HHGAR082 | | eTrex Venture | AS-HHGPS* |
| | GPSMAP 76Cx | AS HHGAR082 | | eTrex Vista | AS-HHGPS* |
| | GPSMAP 76CSx | AS HHGAR082 | | eTrex Camo | AS-HHGPS* |
| | GPS 92 | AS HHGAR082 | | Geko 201 | AS-HHGPS* |
| | GPS II | AS HHGAR082 | | Geko 301 | AS-HHGPS* |
| | GPS II Plus | AS HHGAR082 | **Other GPS Handhelds*** | | AS-HHGPS* |
| ***NOTE:*** *The AS-HHGPS accessory requires the purchase of an additional NMEA data cable (made by the manufacturer of the Handheld GPS Receiver) to complete the connection to the Handheld GPS Receiver.* | | | | | |

# Handheld GPS Connection Kit

The Humminbird® Handheld GPS Connection Kit includes the following items:

- Handheld GPS Cable (NMEA data connection and optional 12 VDC power connection)

- Y-cable for multiple accessory attachment (NMEA and ACCY connections)

- Handheld GPS Connection Kit Accessory Manual

*NOTE: You may have purchased either a direct-connect NMEA data cable, or one that requires splicing to an additional NMEA data cable (made by the manufacturer of the Handheld GPS receiver) to complete the connection to the Handheld GPS receiver.*

*NOTE: The AS-HHGPS accessory requires the purchase of an additional NMEA data cable (made by the manufacturer of the Handheld GPS Receiver) to complete the connection to the Handheld GPS Receiver.*

## Direct-connect Cable Installation (AS HHGAR082, AS HHMAG344)

Use the following instructions to direct-connect your Handheld GPS Receiver to your Fishing System.

1. Insert the Handheld GPS Cable's NMEA-COM connector into the appropriate terminal slot on the back of your Fishing System control head. The slots are keyed to prevent reverse installation, so be careful not to force the connector into the holder.

   *NOTE: If the terminal slot is already used by another accessory, you will need to replace it with the included Y-cable. After you've inserted the Y-cable's COM-connector into the appropriate terminal slot on the back of your Fishing System control head, connect the Handheld GPS Cable to the NMEA-COM connector, and attach your accessory cable to the ACCY-COM connector.*

2. Connect the Handheld GPS Cable to your Handheld GPS Receiver. Refer to your Handheld GPS Receiver manufacturer's user manual for instructions.
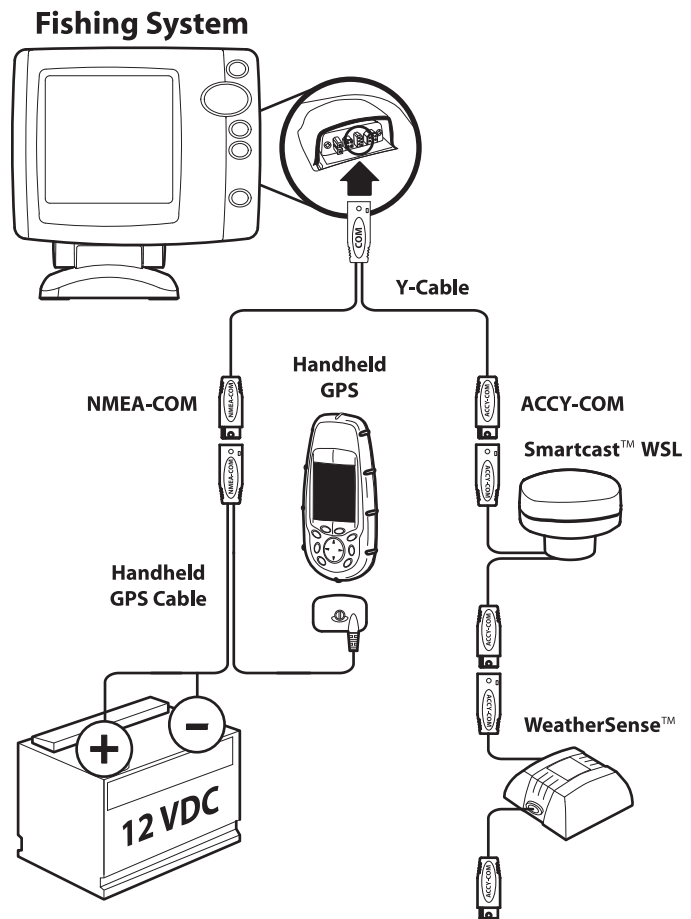
3. Your NMEA Cable allows you to connect your Handheld GPS Receiver to an external 12 VDC power supply. If you choose to run your Handheld GPS Receiver from an external 12 VDC power supply, connect the black wire to ground (-) and the red wire to positive (+) 12 VDC power.

*CAUTION: Use caution before connecting the red +12V wire to your Handheld GPS Receiver, and consult your Handheld GPS Receiver manufacturer's user manual before connecting power and ground. Some Handheld GPS Receivers have a different voltage input than 12V.*

4. Power up the Fishing System Control Head (see your Fishing System Operations Manual for details).

*NOTE: The Fishing System accepts NMEA 0183 version 2.20 input at 4800 baud and listens for the NMEA sentences RMC and GGA to determine current position, heading, speed, time and date. In addition, the GSA and GSV sentences are used to monitor GPS satellite location and usage.*

5. If the NMEA output of your Handheld GPS Receiver can be configured, confirm the following settings on your GPS Handheld Receiver:

   - NMEA Output = enabled
   - Baud rate = 4800
   - RMS and GGA sentences = enabled

*NOTE: See your the Handheld GPS Receiver manufacturer's user manual for NMEA output information.*

*NOTE: When the Fishing System detects the NMEA-input from the Handheld GPS Receiver, the Combo, Track and Bird's Eye Views will be added automatically to the VIEW key function. A Navigation Menu tab and the Navigation X-Press™ Menu will also be added automatically to the menu system.*

## Bare Wire Cable Installation (AS-HHGPS)

Use the following instructions to connect your Handheld GPS to your fishing system using the AS-HHGPS. You will need to purchase the NMEA data cable (not included) from the manufacturer of your Handheld GPS Receiver.

1. Insert the Handheld GPS Cable's NMEA-COM connector into the appropriate terminal slot on the back of your Fishing System control head. The slots are keyed to prevent reverse installation, so be careful not to force the connector into the holder. The pinouts of the Humminbird® NMEA data cable are as follows:

   - Red Wire: +12V
   - Black Wire: Ground
   - Green Wire: NMEA In
   - White Wire: NMEA Out.

*NOTE:* *If the terminal slot is already used by another accessory, you will need to replace it with the included Y-cable. After you've inserted the Y-cable's COM-connector into the appropriate terminal slot on the back of your Fishing System control head, connect the Handheld GPS Cable to the NMEA-COM connector, and attach your accessory cable to the ACCY-COM connector.*

2. Connect the NMEA In (Green wire) of the cable to the NMEA Out of your Handheld GPS Receiver.

*CAUTION!* *Use caution before connecting the red +12V wire to your Handheld GPS Receiver, and consult your Handheld GPS Receiver manufacturer's user manual before connecting power and ground, as some Handheld GPS Receivers have a different voltage input than 12V. The Fishing System control head can provide a maximum of 100mA to a Handheld GPS Receiver. The voltage provided is typically 1 volt lower than the boat battery voltage supplied to the Fishing System control head.*

**Fishing System**

**Handheld GPS**

**HANDHELD GPS CABLE**
**PART # AS-HHGPS**

| | | |
|---|---|---|
| RED | = | +12V |
| BLACK | = | GROUND |
| GREEN | = | NMEA OUT |
| WHITE | | |

**MANUFACTURER'S GPS CABLE**

**GPS CABLE PIN-OUT**
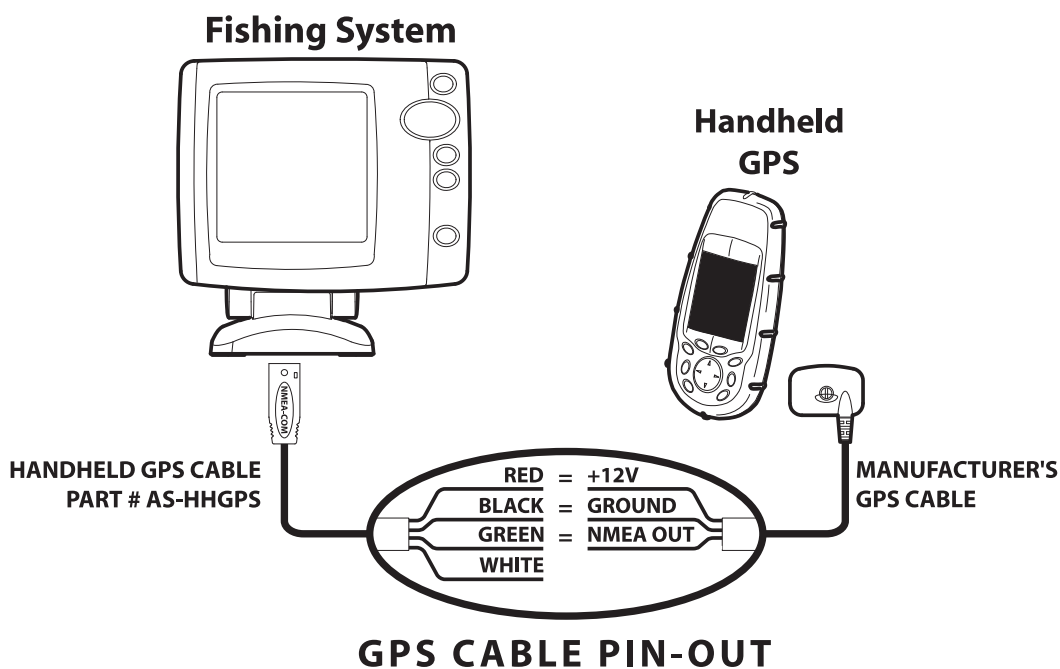
*NOTE:* *The white NMEA Out wire is provided for other uses, such as connecting to an autopilot, but it is not needed to connect to a Handheld GPS Receiver.*

3. Connect the Handheld GPS Cable to your Handheld GPS Receiver. Refer to your Handheld GPS Receiver manufacturer's user manual for instructions.

4. Your NMEA Cable allows you to connect your Handheld GPS Receiver to an external 12 VDC power supply. If you choose to run your Handheld GPS Receiver from an external 12 VDC power supply, connect the black wire to ground (-) and the red wire to positive (+) 12 VDC power.

*CAUTION:* *Use caution before connecting the red +12V wire to your Handheld GPS Receiver, and consult your Handheld GPS Receiver manufacturer's user manual before connecting power and ground. Some Handheld GPS Receivers have a different voltage input than 12V.*

5. Power up the Fishing System Control Head (see your Fishing System Operations Manual for details).

*NOTE: The Fishing System accepts NMEA 0183 version 2.20 input at 4800 baud and listens for the NMEA sentences RMC and GGA to determine current position, heading, speed, time and date. In addition, the GSA and GSV sentences are used to monitor GPS satellite location and usage.*

6. If the NMEA output of your Handheld GPS Receiver can be configured, confirm the following settings on your GPS Handheld Receiver:

   • NMEA Output = enabled
   • Baud rate = 4800
   • RMS and GGA sentences = enabled

*NOTE: See your the Handheld GPS Receiver manufacturer's user manual for NMEA output information.*

*NOTE: When the Fishing System detects the NMEA-input from the Handheld GPS Receiver, the Combo, Track and Bird's Eye Views will be added automatically to the VIEW key function. A Navigation Menu tab and the Navigation X-Press™ Menu will also be added automatically to the menu system.*
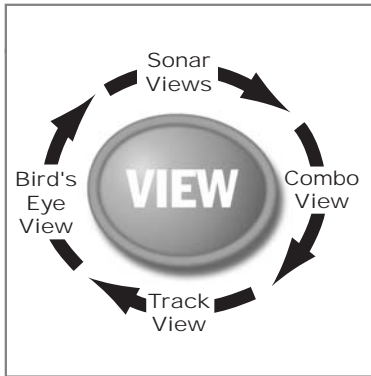
## Views

The following views will be added to the view rotation when a Handheld GPS Receiver is connected to the Fishing System:

### Navigation views:

- Combo View
- Track View
- Bird's Eye View.

When the VIEW key is pressed, the display cycles through the available views. When the EXIT key is pressed, the display cycles through the available views in reverse order. Any view can be hidden or displayed as part of the view rotation using the Views Menu tab.

## Combo View

**Combo View** is displayed as a split screen, with Track View on the left and Sonar View on the right side of the screen. The width of the sonar window can be changed by pressing the MENU key and using the 4- WAY Cursor Control key to select Sonar Window from the Sonar X-Press™ Menu.
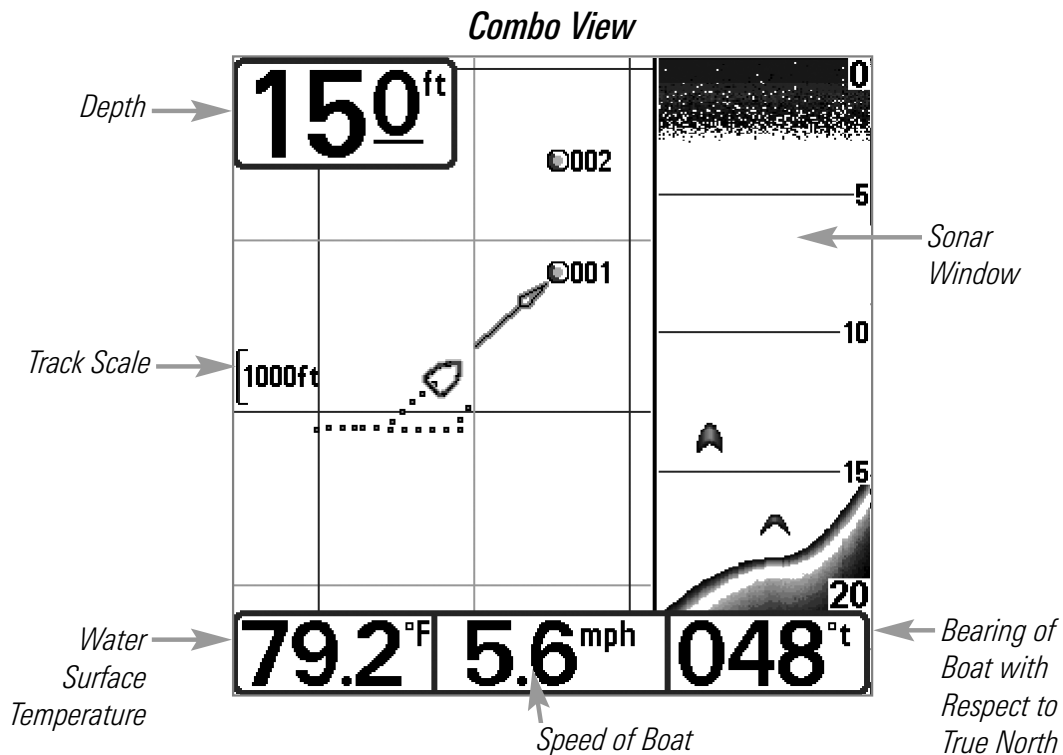


*Combo View*

*Combo View with Navigation*

Depth →  **150ft**

Sonar Window →

Track Scale →  1000ft

START

○002

○001

| 001 | DTG 0.43nm | XTE | 1ft | BRG | 048°t |

Water Surface Temperature →  **79.4°F**   **5.6mph**   **052°t**  ← Bearing of Boat with Respect to True North

Speed of Boat
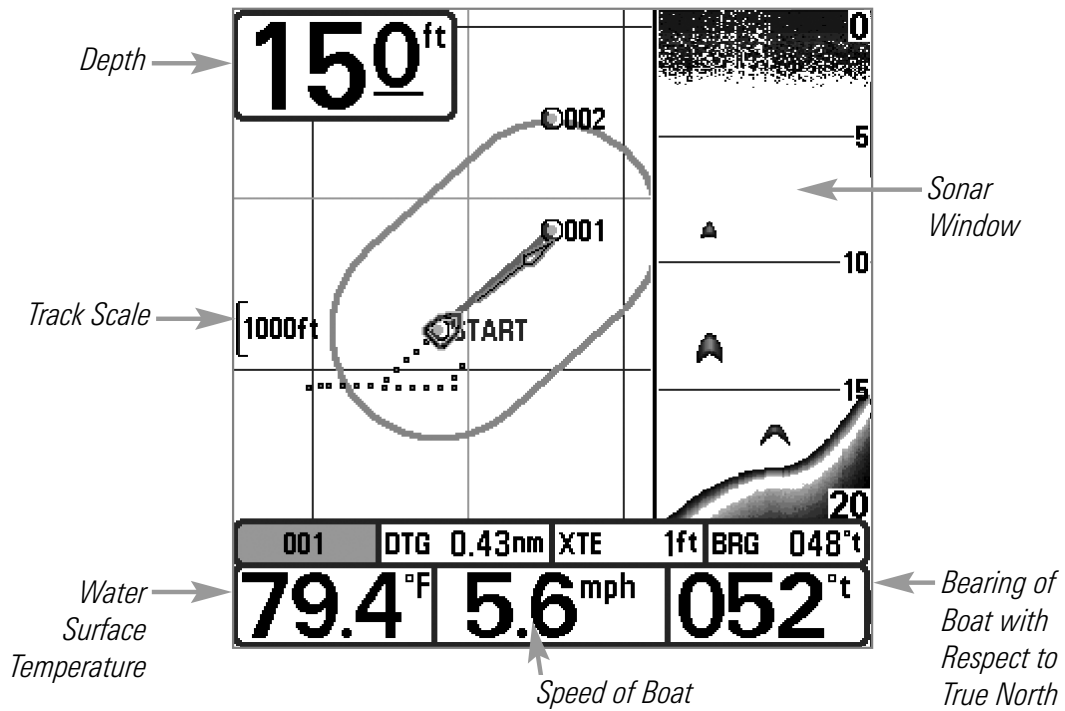
## Track View

**Track View** displays the current track (also known as the position history or breadcrumb trail) showing where the boat has been, along with saved tracks, waypoints, and the current route (when navigating).

*Track View*

Depth →  **167ft**

○002

○001

○003

Track Scale →  0.25nm

Water Surface Temperature →  **78.9°F**   **5.6mph**   **005°t**  ← Bearing of Boat with Respect to True North

Speed of Boat

## Track View with Navigation

Depth

Track Scale

XTE: Cross
Track Error.
Distance of
Boat from
Route

0.25nm

○002
○001
○003
○START

DTG: Distance to
Go to Waypoint

BRG: Bearing
to Waypoint

| 001 | DTG 0.64nm | XTEO.16nm | BRG 048°t |

Water
Surface
Temperature

78.9°F  5.6mph  048°t

Bearing of Boat
with Respect to
True North

Speed of Boat

## Track View with Active Cursor

Depth

167ft

Track Scale

Latitude and
Longitude
Position of
Cursor

Distance to
Go To Cursor

Bearing to
Cursor

0.25nm

○002
○001
○003

Active Cursor

| DIST 0.35nm | N 25°43.168' | 048°t |
| BRG 063°t | W 080°12.383' | |

Bearing of Boat
with Respect
to True North
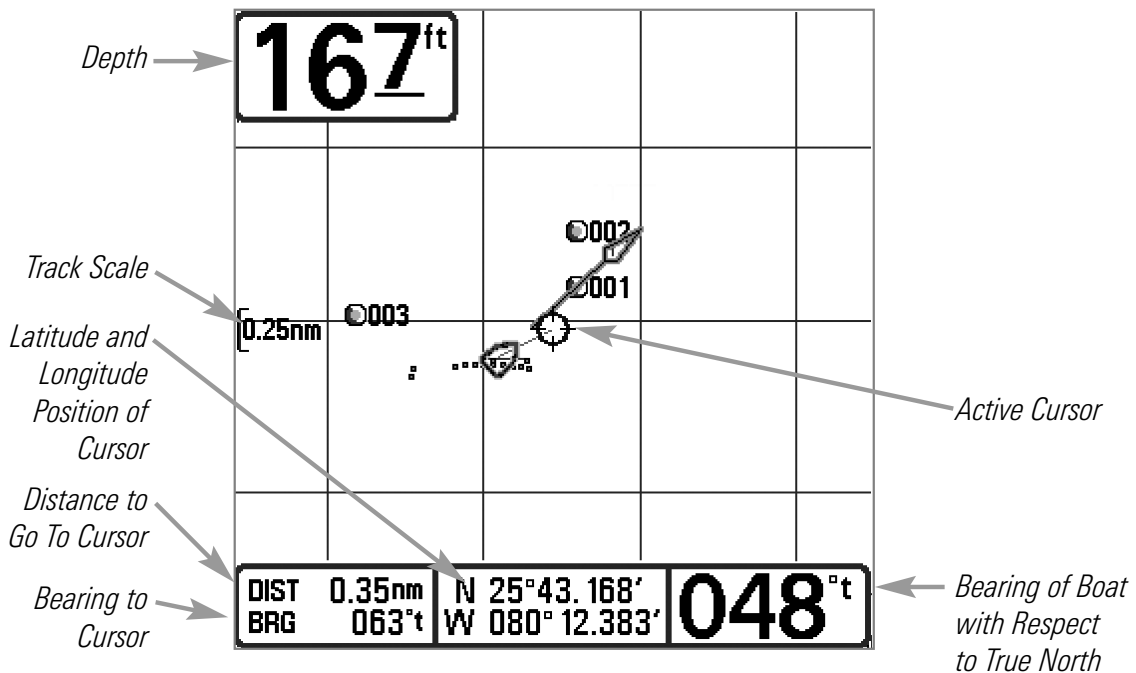
**Panning:** Use the 4-WAY Cursor Control key to move the track around on the display in the
direction of the key being pressed.  When you do this, a bull's eye cursor is drawn at the center
of the screen and is linked to the boat by a gray line, even if the boat is off the screen. At the
same time, the distance and bearing from the boat to the cursor position, as well as the

latitude/longitude coordinates of the cursor, are displayed at the bottom of the view. Pressing the EXIT key moves the cursor back to the original position of the boat.

# Bird's Eye View

**Bird's Eye View** shows a 3D perspective view of the track from a point above and behind the boat (the eye point). As the boat turns, the eye point moves to follow the boat.

When you press the 4-WAY Cursor Control key in the **Bird's Eye View,** the position of the eye point will shift. This allows you to move and turn the eye point so that you can look off to the sides, or even behind the boat. Pressing the RIGHT or LEFT arrow keys on the 4-WAY Cursor Control key turns the eye point right or left, while pressing the UP arrow key moves the eye point forward, and pressing the DOWN Cursor key moves the eye point backward.

Pressing the EXIT key moves the eye point back to its original position behind and above the boat.
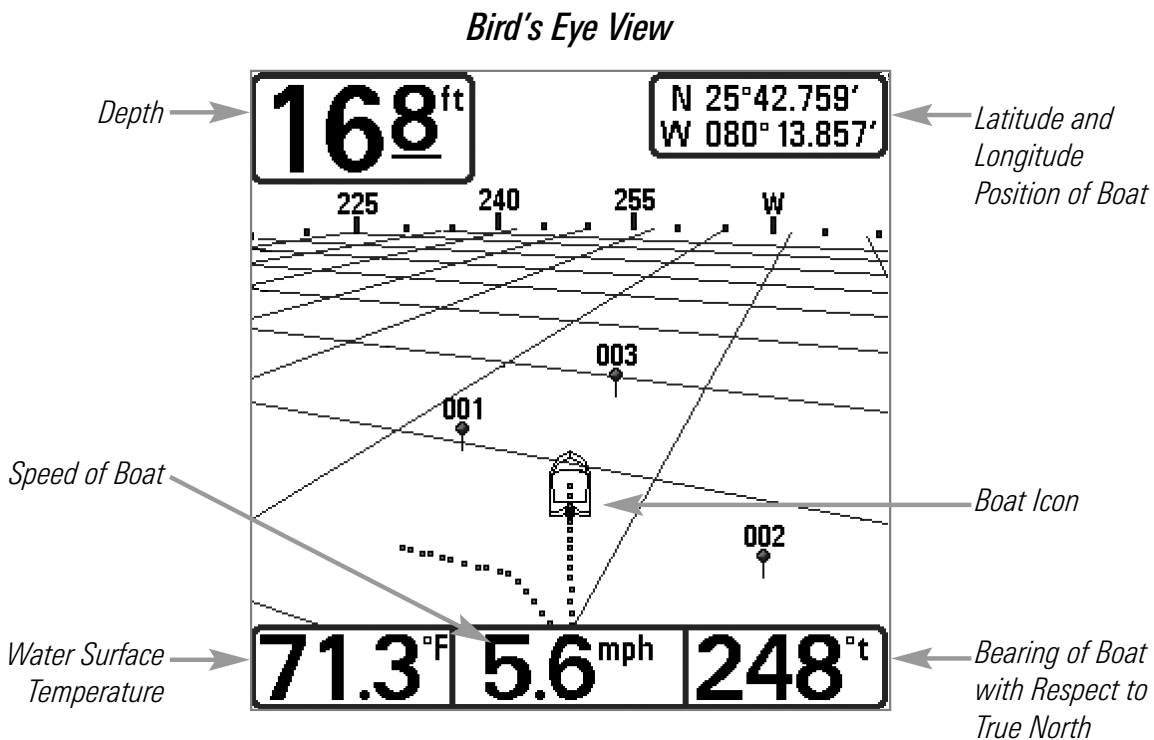
*Bird's Eye View*

*Bird's Eye View with Navigation*



Depth → **119**ft

Latitude and Longitude Position of Boat ← N 25°42.779' W 080° 13.899'

240    255    W    285

XTE: Cross Track Error. Distance of Boat from Route

DTG: Distance to Go to Waypoint

003
001
START

Boat Icon

002

BRG: Bearing to Waypoint

003 | DTG 0.85sm | XTE 95ft | BRG 26 1°t

Water Surface Temperature → 71.3°F   5.6mph   261°t ← Bearing of Boat with Respect to True North

*Speed of Boat*
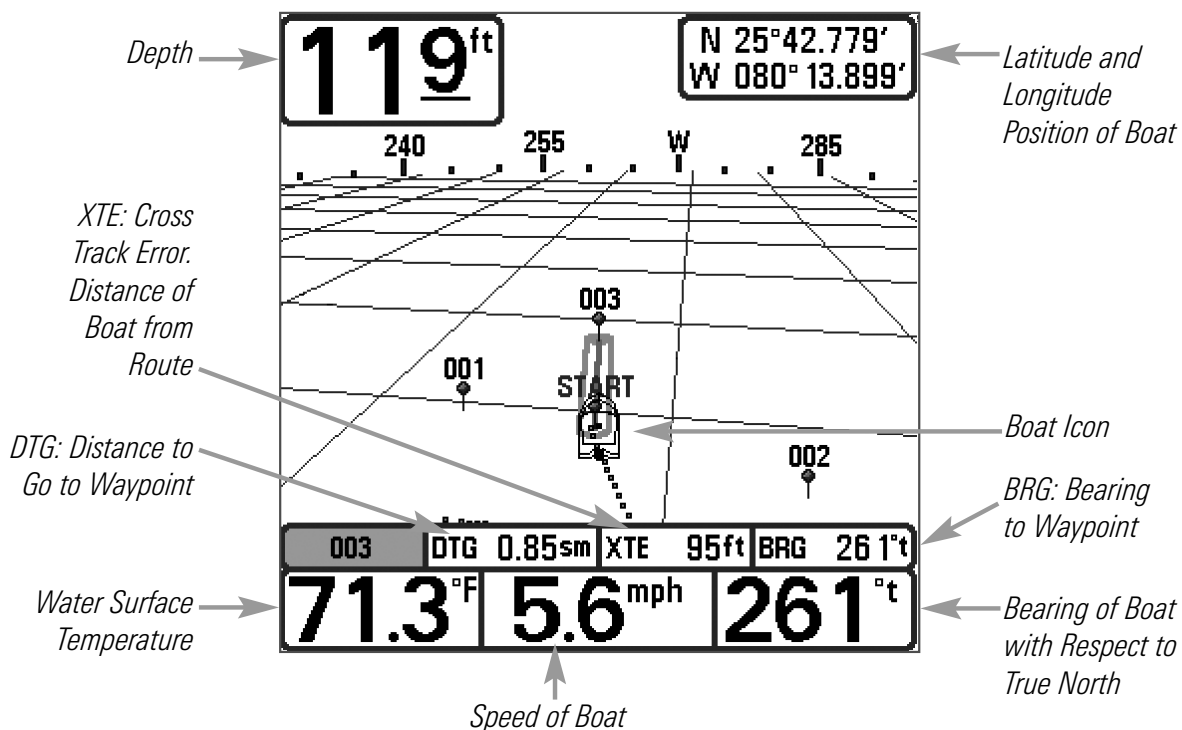
# View Orientation

When your Fishing System control head is in **Track** or **Combo** View, you can choose the orientation of the view by selecting North-Up or Course-Up on the Navigation Main Menu. When **North-Up orientation** is selected, True North is shown at the top of the display. In other words, objects located to the north of the boat are drawn above the boat. When **Course-Up orientation** is selected, the direction of motion of the boat is shown at the top of the display. In other words, objects ahead of the boat are drawn above the boat. In both orientations, the view pans automatically, so that the boat is always centered on the display.
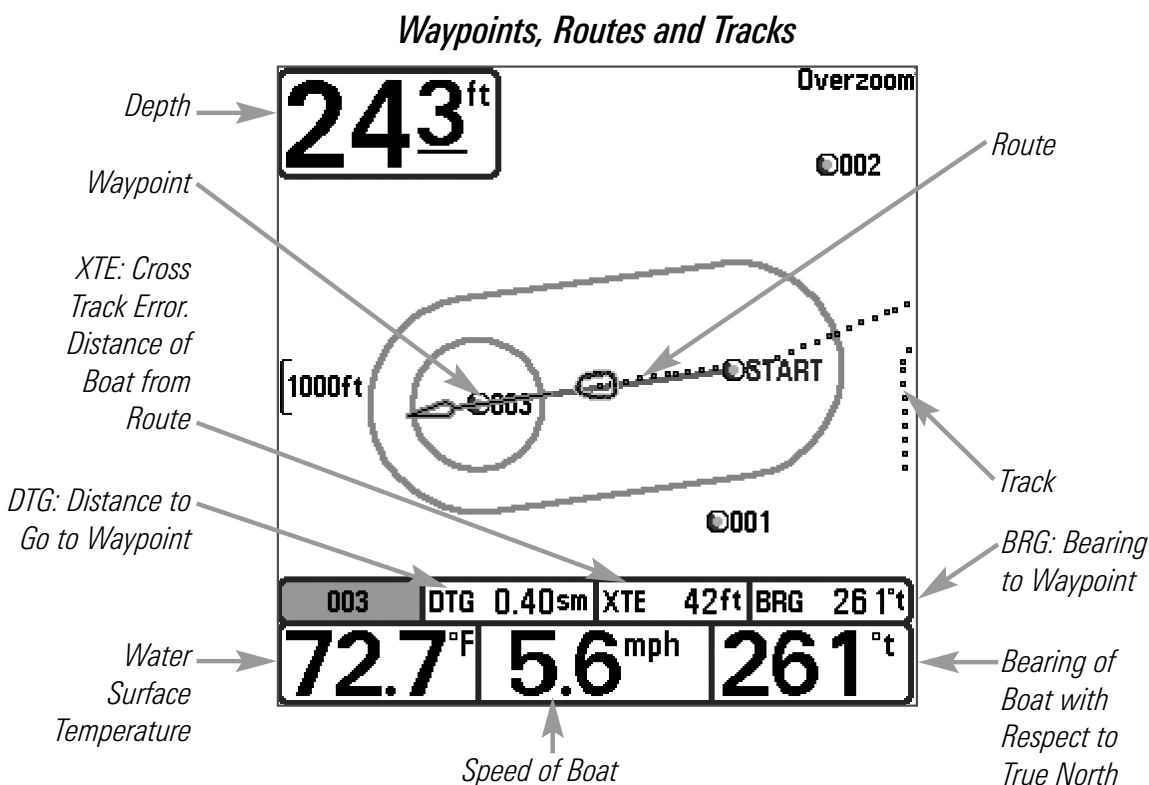
*NOTE: When the boat is stationary, it is drawn as a circle. When the boat is in motion, it takes on a boat shape, pointed in the direction of motion (always Up in the Course-Up orientation).*

# Introduction to Navigation

Use your Fishing System to establish waypoints at areas of interest and navigate to those waypoints via a route (representing the shortest intended distance between waypoints). You can also view and save tracks, which represent the actual path of the boat.

# Waypoints, Routes and Tracks

**Waypoints** are stored positions that allow you to mark areas of interest or navigation points.

*Waypoints, Routes and Tracks*



*Depth* → **243**ft
Overzoom

*Waypoint*

*XTE: Cross Track Error. Distance of Boat from Route*

1000ft

*Route*

©002

©START

*Track*

*DTG: Distance to Go to Waypoint*

©001

*BRG: Bearing to Waypoint*

| 003 | DTG 0.40sm | XTE 42ft | BRG 261't |

*Water Surface Temperature* → **72.7**°F **5.6**mph **261**°t

*Bearing of Boat with Respect to True North*

*Speed of Boat*

**Routes** link two or more waypoints together to create a path for navigation, and are used in trip planning. A route represents your intended navigation and shows the shortest path from each waypoint to the next. As you travel a route, staying on the route line is the most efficient way to get to your destination, although you should always look out for obstacles not shown on the fishing system view.

**Tracks** consist of detailed position history, and are displayed as a breadcrumb trail of trackpoints. The Current Track shows the position history since the unit was powered up. You can clear the Current Track or save it at any time. The current track represents your actual path so far.

# Save, Edit, or Delete a Waypoint

**Save your current position as a waypoint:** On any view, press the MENU key to display the X-Press™ Menu. Select Mark and press the RIGHT Cursor key to save the current position of the boat as a waypoint.

**Save the cursor position as a waypoint:** On the Track or Combo View, use the 4-WAY Cursor Control key to designate the position you want to save as a waypoint. Then press the MENU key to display the X-Press™ Menu. Select Mark and press the RIGHT Cursor key to save the current position of the boat as a waypoint.

**Save a position from the sonar history:** On any Sonar View, use the 4-WAY Cursor Control key to point to a feature in the sonar history (also called the Sonar Saver feature). Then press the MENU key to display the X-Press™ Menu. Select Mark and press the RIGHT Cursor key to create a waypoint at the location where that sonar reading was taken. The new waypoint will also record the depth at that location.

> *NOTE: When you save a waypoint by any of these methods, a numerical waypoint name is automatically assigned. You can edit the waypoint information later to give it a different name and select an icon to represent it (see **Navigation Menu Tab, Waypoint Submenu**).*

**Display the Waypoints Submenu:** From any view, press the MENU key twice to display the Main Menu System, then use the RIGHT Cursor key to select the Navigation tab. Select Waypoints and press the RIGHT Cursor key to display the Waypoints submenu.



*Waypoints Submenu*

**Program a specific position as a waypoint:** To create a waypoint that is NOT your current position, from the Waypoints submenu, select the Create option and press the RIGHT Cursor key. Use the 4-WAY Cursor Control key to program a waypoint name, latitude, longitude, and icon before selecting Save.

**Edit a waypoint:** From the Waypoints submenu, select Edit and press the RIGHT Cursor key to display a list of saved waypoints. Select the waypoint you want to edit and press the RIGHT Cursor key. Use the 4-WAY Cursor Control key to move from field to field, and the UP and DOWN Cursor keys to changes values once you are in a field. In the Waypoint Name, Latitude and Longitude fields, use the UP and DOWN Cursor keys to change the letter or number. All upper and lower case letters are available, as well as digits 0-9 and some punctuation characters. In the Waypoint Icon field, use the UP and DOWN Cursor keys to change the icon used to represent the waypoint on the Combo and Track Views. You can exit these fields with the LEFT and RIGHT Cursor keys or by pressing the EXIT key. Select Save and press the RIGHT Cursor key to save your changes.

To make it easier to view a waypoint to edit, select **Sort By** and press the LEFT or RIGHT Cursor keys to select a sort order:

- **Name** shows the waypoints alphabetically
- **Time** shows the most recently-created waypoint first
- **Distance** shows the closest waypoint first.

**Delete a waypoint:** From the Waypoints submenu, select Delete and press the RIGHT Cursor key to display a list of waypoints. Select the waypoint you want to delete, then press the RIGHT Cursor key. You will be asked to confirm deletion before the waypoint is actually deleted.

## Navigate to a Waypoint or Position

**Navigate to the cursor position:** From the Track or Combo View, use the 4-WAY Cursor Control key to select a position or waypoint to which you want to navigate. Press the MENU key once to display the Navigation X-Press™ Menu.  Select Go To and press the RIGHT Cursor key.  Navigation will begin immediately.

**Navigate to a specified waypoint:** Press the MENU key once to display the Navigation X-Press™ Menu. Select Go To and press the RIGHT Cursor key. Then choose the waypoint to which you would like to navigate from the waypoint list and press the RIGHT Cursor key to select it.

> *NOTE: By repeating the previous instructions, you can add more waypoints to create a longer multi-segment route.*

**Skipping a waypoint:** From the Navigation X-Press™ Menu, select Skip Next Waypoint and press the RIGHT Cursor key. If there is not another waypoint to skip to, navigation will be cancelled.

**Cancel navigation:** From the Navigation X-Press™ Menu, select Cancel Navigation and press the RIGHT Cursor key. Canceling navigation removes the route and any waypoints created.

# Add a Waypoint Target or Trolling Grid

Waypoint Target

Track Scale

*Track View with Target*
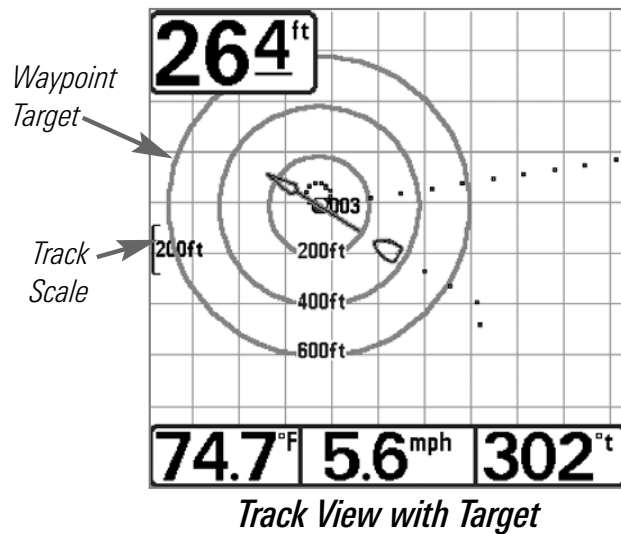
**Add or Remove a Waypoint Target:** From the Waypoints submenu, select Target and press the RIGHT Cursor key to display a list of waypoints. Select the waypoint you want to target. A target consisting of concentric circles centered on the selected waypoint will appear on all of the navigation views; the target shows various distance ranges from the targeted waypoint. To remove the target, choose Remove Target from the Navigation X-Press™ Menu, and press the RIGHT Cursor key.

Track Scale

Waypoint Trolling Grid

*Track View with Grid*
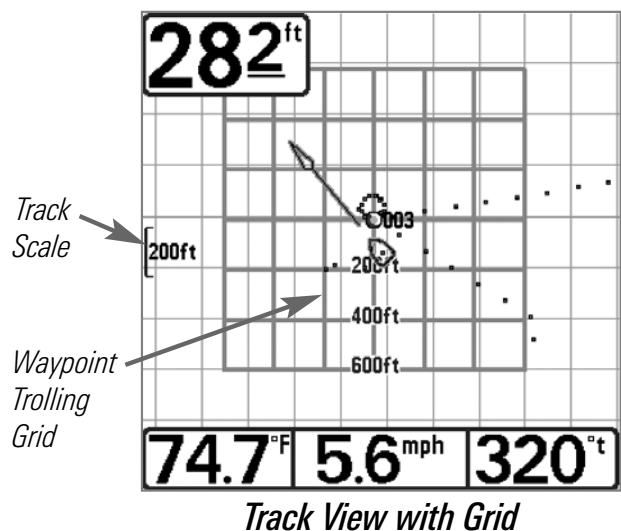
**Add or Remove a Trolling Grid:** From the Waypoints submenu, select Grid and press the RIGHT Cursor key to display a list of waypoints. Select the waypoint to which you want to add the grid. The trolling grid will appear on all of the navigation views and can be used as a guide when trolling around a waypoint. The grid can be rotated to any desired heading using Grid Rotation from the Navigation main menu. To remove the trolling grid, choose Remove Grid from the Navigation X-Press™ Menu, and press the RIGHT Cursor key.

*NOTE: Only one waypoint can have either a target or a grid at one time. If you apply a target or a grid to a new waypoint, the original waypoint will lose its target or grid.*

*NOTE: The spacing of the rings on the waypoint target and the spacing of the grid lines on the trolling grid is the same as the length of the scale bar on the left edge of the display. Zooming in or out will decrease or increase the spacing, respectively.*

# Save or Clear a Current Track

**Save the current track:** From the Navigation X-Press™ Menu, select Save Current Track and press the RIGHT Cursor key. The track will remain on the display, but will change from black to gray. To remove the track completely from the display, see Edit, Delete or Hide Saved Tracks.

> *NOTE: When you save a track, a name is automatically assigned. The track name consists of a date/time stamp but can be re-named later (see **Edit a Saved Track**).*

**Clear the current track:** From the Navigation X-Press™ Menu, select Clear Current Track and press the RIGHT Cursor key. The track will be removed from the display and discarded.

# Edit, Delete or Hide Saved Tracks

**Display the Tracks Submenu:** From any view, press the MENU key twice to display the Main Menu System, then use the RIGHT Cursor key to select the Navigation tab. Select Saved Tracks and press the RIGHT Cursor key to display the Saved Tracks submenu.

**Edit a saved track:** From the Saved Tracks submenu, select Edit and press the RIGHT Cursor key to display the list of saved tracks. Select the track you want to edit and press the RIGHT Cursor key. When the Edit Track dialog box appears, use the 4-WAY Cursor Control key to move between fields. In the Track Name field, the UP and DOWN Cursor keys change the letter or number. All upper and lower case letters are available, as well as digits 0-9 and some punctuation characters. You can exit the Track Name field with the LEFT and RIGHT Cursor keys or by pressing the EXIT key. Select Save and press the RIGHT Cursor key to save your changes.

**Delete a saved track:** From the Saved Tracks submenu, select Delete and press the RIGHT Cursor key to display the list of saved tracks. Select the track you want to delete and press the RIGHT Cursor key. You will be asked to confirm deletion before the track is actually deleted.

**Hide or display a saved track:** From the Saved Tracks submenu, select Edit and press the RIGHT cursor key to display the list of saved tracks. Select the track you want to hide or display, and press the RIGHT Cursor key. When the Edit Track dialog box appears, use the LEFT and RIGHT Cursor keys to change the Visibility field to Hidden or Visible. Press the EXIT key to return to the Tracks submenu.

# The Menu System

The menu system is divided into easy-to-use menu modules. The main components of the menu system are as follows:

**Start-Up Options Menu -** Press the MENU key during the power up sequence to view the Start-Up Options menu.

**X-Press™ Menu -** The X-Press™ Menu allows you to access the frequently-used settings without having to navigate through the whole menu system.
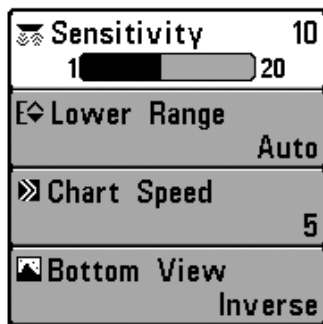


*X-Press™ Menu*

Press the MENU key once to display the X-Press™ Menu. When you select a menu item from the X-Press™ Menu, the menu will collapse, leaving only the menu choice on the screen. Use the UP or DOWN Cursor keys to reactivate the X-Press™ Menu.

*NOTE: The X-Press™ Menu choices will vary depending on which view is active when you press the MENU key, as well as whether you are in Normal or Advanced User Mode. Either the Sonar or Navigation X-Press™ Menu will appear, depending on the view you are in.*

**Main Menu Tabs -** Less frequently-adjusted menus are grouped into the Main Menu System. The Main Menu System is organized under the following tab headings to help you find a specific menu item quickly: Alarms, Sonar, Navigation (if the GPS Receiver is attached), Setup, Views, and Accessories.
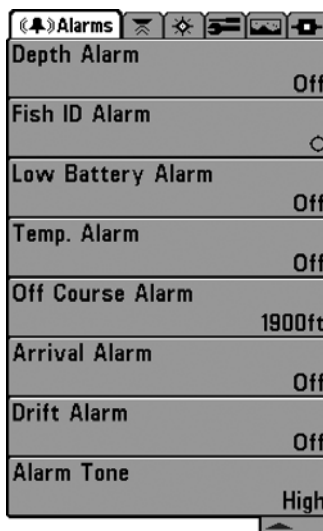


*Main Menu System*
*Normal User Mode*

Press the MENU key twice for the Main Menu, then use the RIGHT or LEFT Cursor keys to select a tab, and use the DOWN or UP Cursor keys to select a specific menu item under that tab, then use the LEFT or RIGHT Cursor keys again to change a menu setting. Press the EXIT key to move quickly to the top of the tab. A down arrow at the bottom of a menu means that you can scroll to additional menu choices using the DOWN Cursor key. A right or left arrow on a menu choice means that you can use the RIGHT or LEFT Cursor keys to make changes or to see more information.

*NOTE: The Main Menu choices will vary depending on whether you are in Normal or Advanced User Mode or if you have other accessories attached.*

*Sonar Tab, Normal Mode*



*Sonar Tab, Advanced Mode*

**User Mode (Normal or Advanced) -** An Advanced Mode is provided for users who desire the highest level of control over the Fishing System, and Normal Mode is provided for users who desire greater simplicity and fewer menu choices. Additional Advanced menu choices will be displayed throughout the menu system when you navigate to specific menus while in Advanced Mode. Any changes made while in Advanced Mode will remain in effect after you switch back to Normal Mode. For example, if you set specific views to be visible while in Advanced User Mode, and then return to Normal User Mode, those views will still be visible.

*To change the User Mode Setting: Highlight User Mode on the SetUp Menu tab, and use the LEFT or RIGHT Cursor keys to set the User Mode to Normal or Advanced.*

**Total Screen Update -** When you change any menu settings that affect the View, the view will update immediately (i.e. you don't have to exit the menu to apply the change to the screen). For instance, by selecting Bottom View from the X-Press™ Menu, and switching between "Inverse" and "Structure ID®", it is possible to alternate quickly between the two viewing methods.
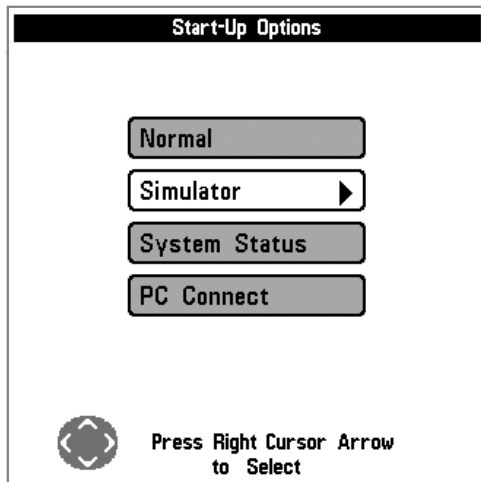
## Start-Up Options Menu



*Start-Up Options Menu*

Press the MENU key when the Title screen is displayed to access the Start-Up Options menu.

Use the UP or DOWN Cursor keys to position the cursor, then the RIGHT Cursor key to select one of the following choices. If you wait too long, the system will default to whichever menu mode happens to be highlighted:

- Normal
- Simulator
- System Status
- PC Connect (use with PC Connect Cable).

See the following paragraphs for more information about each of these choices.

## Normal Operation

Use Normal operation for on the water operation with a transducer connected. In addition, your Fishing System uses advanced transducer detection methods to determine if a transducer is connected. If a functioning transducer is connected, Normal operation will be selected automatically at power up and your Fishing System can be used on the water.

Exit Normal operation by powering your Fishing System off.
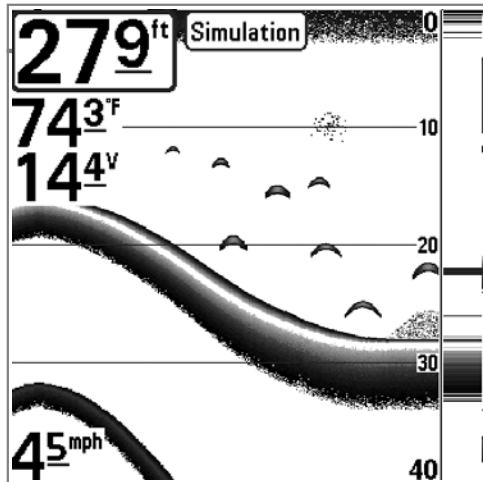
*Simulator*

# Simulator

Use the Simulator to learn how to use your Fishing System before taking your boat on the water. The Simulator is a very powerful tool that simulates on the water operation, providing a randomly-updated display. We recommend going through this manual while using the Simulator, since all of the menus function and affect the display the way they actually do when in Normal operation.

*NOTE: To get the full benefit of the Simulator, it is important to select Simulator manually from the Start-Up Options menu as opposed to letting the Fishing System enter Simulator automatically (as it will if a transducer is not connected and you do nothing during power up). Manually selecting Simulator from the Start-Up Options menu allows you to pre-configure your Fishing System for on the water operation. Any menu changes you make will be saved for later use.*

A message will appear on the display periodically to remind you that you are using the Simulator.
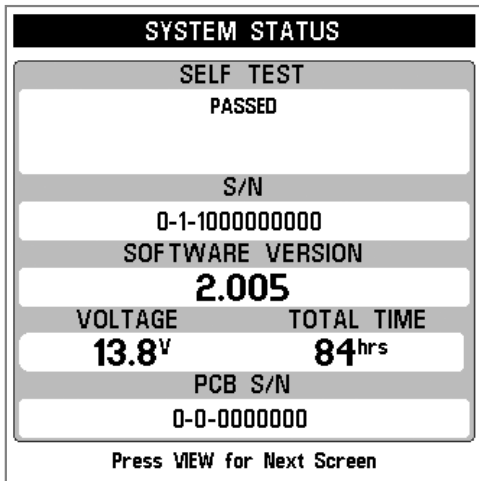
Exit the Simulator by powering your Fishing System off.

# System Status

Use System Status to view system connections and to conduct a unit self-test. Exit System Status by powering your Fishing System off.

The following screens are displayed in turn when you press the VIEW button when using System Status:

- Self Test
- Accessory Test
- GPS Diagnostic View.



*System Status Self Test Screen*

**Self Test** displays results from the internal diagnostic self test, including unit serial number, Printed Circuit Board (PCB) serial number, software version, total hours of operation and the input voltage.
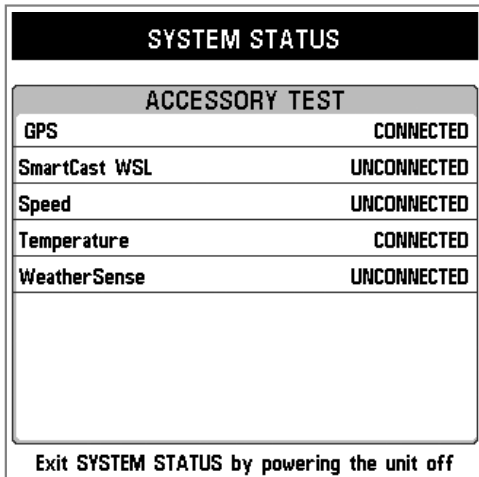


*Accessory Test Screen*

**Accessory Test** lists the accessories connected to the system.

*NOTE: The speed accessory will be detected only if the paddlewheel has moved since your Fishing System was powered up.*

**GPS Diagnostic View** shows a sky chart and numerical data from the GPS receiver. The sky chart shows the location of each visible GPS satellite with its satellite number and a signal strength bar. A dark grey bar indicates that the satellite is being used to determine your current position. A light gray bar indicates that the satellite is being monitored, but is not yet being used.
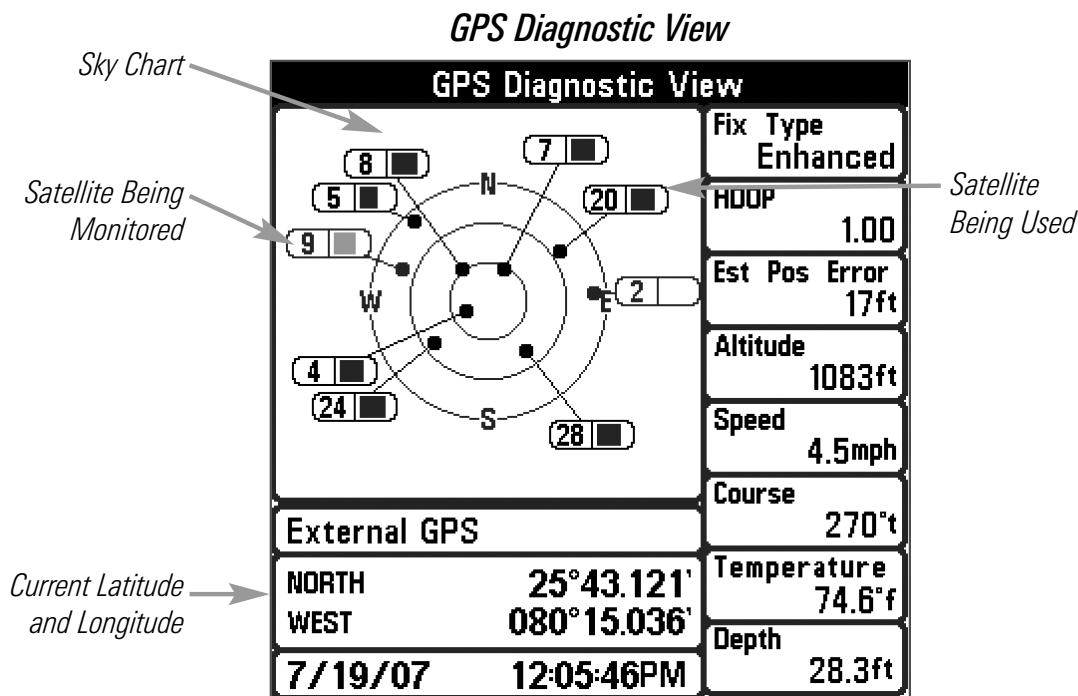
> *NOTE: The GPS Diagnostic View only appears if the GPS Receiver is connected.*

*GPS Diagnostic View*



This view also reports the current position, local time and date, and other numeric information. The current GPS Fix Type is reported as No Fix, 2D Fix, 3D Fix, or Enhanced. An Enhanced fix has been augmented using information from WAAS, EGNOS, or MSAS. A 3D or Enhanced Fix is required for navigation. HDOP (the Horizontal Dilution of Precision) is a GPS system parameter which depends on the current satellite configuration. HDOP is used to calculate the Estimated Position Error.

# PC Connect
## (With PC Connect Cable Only)

Use PC Connect to update the software of the Fishing System control head. This feature requires the use of the PC Connect Cable. Complete instructions are included with the PC Connect Cable accessory.

> *NOTE: The PC Connect Cable requires a separate purchase. For more information visit our website at* ***www.humminbird.com*** *or contact our Customer Resource Center at* ***1-800-633-1468***.

Exit PC Connect mode by powering the Fishing System off.

```
⊠ Mark
                    ▶

⨯ Sensitivity
                  16

E⇕ Upper Range
                 0ft

E⇕ Lower Range
               48ft

≫ Chart Speed
                   7

▣ Bottom View
            Inverse

⊕ Zoom Level
                  2x
```

*Sonar X-Press™ Menu*

# Sonar X-Press™ Menu
## (Sonar Views Only)

The **Sonar X-Press™ Menu** provides access to the settings most frequently-used. Press the MENU key once while in any of the Sonar Views to access the Sonar X-Press™ Menu.

*NOTE: Menu choices will vary depending on system settings such as whether the unit is set for Advanced User mode.*

The Mark menu selection will be added to the Sonar X-Press™ Menu when a Handheld GPS Receiver is connected to the Fishing System.

See your Fishing System Operations Manual for information on the standard Sonar X-Press™ Menu choices.

```
⊠ Mark
                    ▶
```

# Mark

**Mark** allows you to mark the position of a waypoint, either at the current boat location, or, if the Cursor is active, at the current Cursor location.

**To Mark a Waypoint:**

1. Highlight Mark on the Sonar X-Press™ Menu.

2. Press the RIGHT Cursor key to mark the location of a Waypoint.
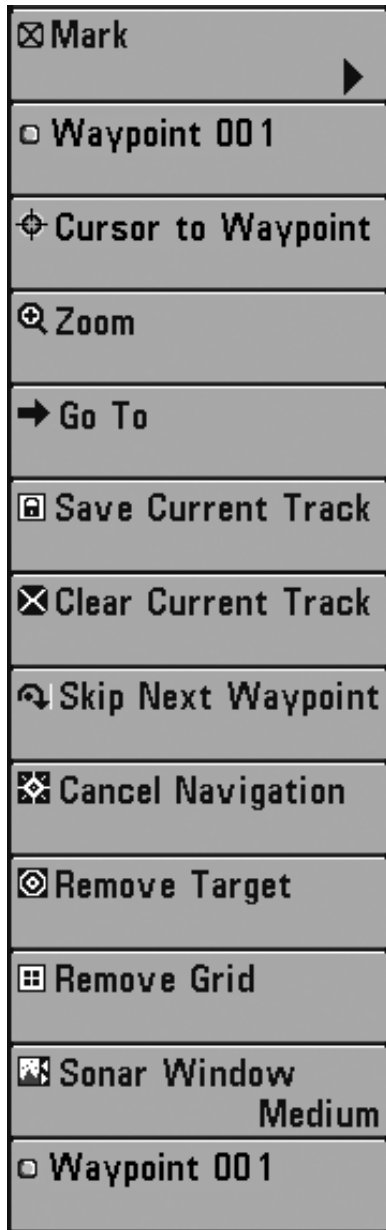
## Navigation X-Press™ Menu
### (Navigation Views Only)

The **Navigation X-Press™ Menu** provides access to the settings most frequently used. Press the MENU key once while in the Bird's Eye View, Track View, or Combo View to access the Navigation X-Press™ Menu.

*NOTE: Menu choices will vary depending on system settings, such as whether you are currently navigating.*

The Navigation X-Press™ Menu will be added to the menu system when a Handheld GPS Receiver is connected to the Fishing System, and will contain the following choices:

- Mark
- Waypoint 001 (Only When Active)
- Cursor to Waypoint (Combo or Track View)
- Zoom
- Go To
- Save Current Track
- Clear Current Track
- Skip Next Waypoint (Only When Navigating)
- Cancel Navigation (Only When Navigating)
- Remove Target (Only if a Target is Active)
- Remove Grid (Only if a Grid is Active)
- Sonar Window (Combo View Only)
- Waypoint [Name: Most recently-created] (Only When Active).

*Navigation X-Press™ Menu*

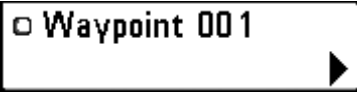## Mark

**Mark** allows you to mark the position of a waypoint, either at the current boat location, or, if the Cursor is active, at the current Cursor location.

**To Mark a Waypoint:**

1. Highlight Mark on the Sonar X-Press™ Menu.
2. Press the RIGHT Cursor key to mark the location of a Waypoint.
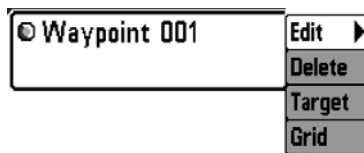
| ▢ Waypoint 001 ▶ |

# Waypoint [Name]
## (Only with an Active Cursor on a Waypoint)

Waypoint [Name] allows you to view the Waypoints submenu for the waypoint under your cursor.

### To View the Waypoint [Name] Submenu:

1. Move the cursor onto an existing waypoint and press the MENU key once, or use the **Cursor to Waypoint** to select a waypoint from a list of saved waypoints.

2. Highlight **Waypoint [Name]** on the Navigation X-Press™ Menu.

3. Press the RIGHT Cursor key to view the Waypoints submenu, which contains the following menu choices:

| ◉ Waypoint 001 | Edit ▶ |
| | Delete |
| | Target |
| | Grid |

*Waypoint Submenu*

*NOTE: See **Navigation Menu Tab** for more Waypoints information.*

### The Waypoint Submenu contains the following menu choices:

**Edit** allows you to edit the Name, Position (Latitude and Longitude), and select the Icon that will be used to represent the waypoint in the Track and Combo Views.

**Delete** allows you to delete a waypoint from the list of saved waypoints.

**Target** allows you to apply a target to a waypoint selected from the from the list of waypoints.

**Grid** allows you to apply a trolling grid to a waypoint selected from the list of waypoints.
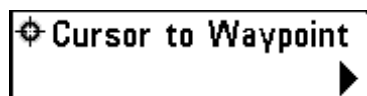
| ✛ Cursor to Waypoint ▶ |

# Cursor to Waypoint
## (Track or Combo View Only)

**Cursor to Waypoint** allows you to quickly move the cursor to any saved waypoint, so that you can locate it or edit it.

*NOTE: This X-Press™ Menu item appears only if you have saved waypoints.*

### To Move a Cursor to a Saved Waypoint:

1. Highlight Cursor to Waypoint on the Navigation X-Press™ Menu.

2. Press the RIGHT Cursor key to initiate Cursor to Waypoint.

3. Press the UP or DOWN Cursor key to highlight the waypoint you wish to move the cursor to, then use the RIGHT Cursor key to select the destination waypoint.

## Zoom

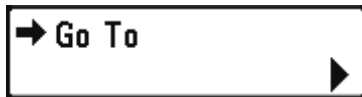**Zoom** allows you to change the scale of the Bird's Eye, Track and Combo Views.

To Zoom:

1. Highlight Zoom on the Navigation X-Press™ Menu.

2. Press the LEFT or RIGHT Cursor keys to increase or decrease the Zoom level.

## Go To

**Go To** allows you to start Navigation towards a waypoint. If the Cursor is active, choosing Go To creates a waypoint and starts navigation towards that waypoint. If the Cursor is not active, choosing Go To displays the list of waypoints so that you can select the waypoint towards which you want to navigate.

To Begin Navigation:

1. Highlight Go To on the Navigation X-Press™ Menu.

2. Press the RIGHT Cursor key. Navigation will begin immediately if the Cursor is active. If the Cursor is not active, the Waypoint selection list will appear. Select a waypoint from the list by using the 4-WAY Cursor Control key, and navigation will begin immediately.
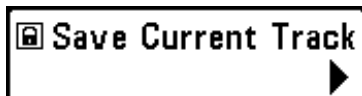
## Save Current Track

**Save Current Track** allows you to save the current track being displayed. After the current track is saved, a new current track is started.

*NOTE: Save Current Track appears on the Navigation X-Press™ Menu after you have finished navigation.*

To Save Current Track:

1. Highlight Save Current Track on the Navigation X-Press™ Menu.

2. Press the RIGHT Cursor key to initiate saving the current track.

3. The Confirm dialog box will appear. To save the current track, press the RIGHT Cursor key once more. To cancel saving the current track, press the LEFT Cursor key.

# Clear Current Track

**Clear Current Track** allows you to clear the current track being displayed and start a new track at the present position.

**To Clear Current Track:**

1. Highlight Clear Current Track on the Navigation X-Press™ Menu.

2. Press the RIGHT Cursor key to initiate clearing the current track.

3. The Confirm dialog box will appear. To clear the current track, press the RIGHT Cursor key once more. To cancel clearing the current track, press the LEFT Cursor key.
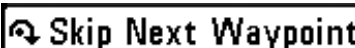
# Skip Next Waypoint
## (Only When Navigating)

**Skip Next Waypoint** removes the next waypoint from the current route. This menu choice will only appear when you are currently navigating a route.

**To Skip Next Waypoint:**

1. Highlight Skip Next Waypoint on the Navigation X-Press™ Menu.

2. Press the RIGHT Cursor key to initiate skipping the next waypoint.

3. The Confirm dialog box will appear. To skip the next waypoint, press the RIGHT Cursor key once more. To cancel skipping the next waypoint, press the LEFT Cursor key.

# Cancel Navigation
## (Only When Navigating)

**Cancel Navigation** discards the current route and exits Navigation Mode. This menu choice will only appear when you are currently navigating a route.

**To Cancel Navigation:**

1. Highlight Cancel Navigation on the Navigation X-Press™ Menu.

2. Press the RIGHT Cursor key to initiate canceling navigation.

3. The Confirm dialog box will appear. To cancel navigation, press the RIGHT Cursor key once more. To avoid canceling navigation, press the LEFT Cursor key.

## Remove Target
### (Only if a Target is Active)

**Remove Target** removes the waypoint target from the display. This menu choice will only appear when a target has already been applied to a waypoint. See *Navigation Menu Tab: Waypoints* for more information.

### To Remove a Target:

1. Highlight Remove Target on the Navigation X-Press™ Menu.

2. Press the RIGHT Cursor key to remove the target.

## Remove Grid
### (Only if a Grid is Active)

**Remove Grid** removes the waypoint grid from the display. This menu choice will only appear when a grid has already been applied to a waypoint. See *Navigation Menu Tab: Waypoints* for more information.

### To Remove a Grid:

1. Highlight Remove Grid on the Navigation X-Press™ Menu.

2. Press the RIGHT Cursor key to remove the grid.

## Sonar Window
### (Combo View Only)

**Sonar Window** sets the size of the Sonar Window in the Combo View. Sonar Window can only be accessed from the Combo View.

### To Set the Size of the Sonar Window in the Combo View:

1. Highlight Sonar Window on the Navigation X-Press™ Menu.

2. Press the LEFT or RIGHT Cursor keys to adjust the size of the sonar window. (Wide, Medium, Narrow, Default = Medium)

```
┌─────────────────────┐
│ ▢ Waypoint 001      │
│                   ▶ │
└─────────────────────┘
```
# Waypoint [Name]
## (Most recently-created waypoint)

**Waypoint [Name]** allows you to view the waypoints submenu for the most recently created waypoint.

*NOTE: You must have created a waypoint at least once since you last powered up the Fishing System for this menu choice to appear.*

### To view the Waypoint [Name] Submenu:

1.  Highlight **Waypoint [Name]** on the Navigation X-Press™ Menu.

2.  Press the RIGHT Cursor key to view the Waypoints submenu.

### The Waypoint [Name] Submenu contains the following menu choices:

**Edit** allows you to edit the Name, Position (Latitude and Longitude), and select the Icon that will be used to represent the waypoint in the Track and Combo Views.

**Delete** allows you to delete a waypoint from the list of saved waypoints.

**Go To** allows you to select a waypoint and start navigation toward that waypoint, or add that waypoint to the end of the current route.

**Target** allows you to apply to a target to a waypoint selected from the from the list of waypoints.

**Grid** allows you to apply a trolling grid to a waypoint selected from the list of waypoints.

*NOTE: See **Navigation Menu Tab** for more Waypoints information.*
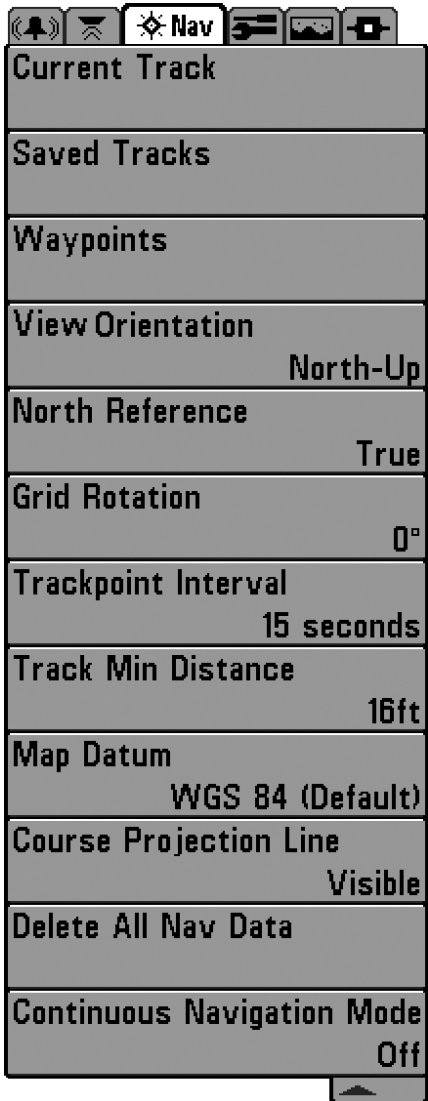
# Navigation Menu Tab

Press the MENU key twice to access the Main Menu System, then press the RIGHT Cursor key to select the Navigation tab.

*NOTE: Menu choices will vary depending on system settings.*

The Navigation Menu Tab will be added to the menu system when a Handheld GPS Receiver is connected to the Fishing System, and the following menu choices will appear in the menu tab:

- Current Track
- Saved Tracks
- Waypoints
- View Orientation
- North Reference
- Grid Rotation
- Trackpoint Interval
- Track Min Distance (Advanced)
- Map Datum (Advanced)
- Course Projection Line
- Delete All Nav Data (Advanced)
- Continuous Navigation Mode.
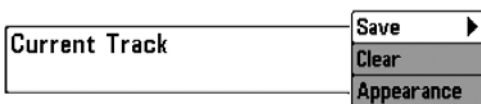
## Current Track

**Current Track** allows you to save, clear, or change the appearance of the current track.

### To view the Current Track Submenu:

1. Highlight Current Track on the Navigation main menu.
2. Press the RIGHT Cursor key to view the Current Track submenu.

### The Current Track Submenu contains the following menu choices:

**Save** allows you to save the current track.

**Clear** allows you to clear the current track.

**Appearance** allows you to change the style and color of the current track (Breadcrumb Trail, Dashed Line, Solid Line or Wide Line, and if a line, the color of the line).

| | | |
|---|---|---|
| Saved Tracks | Edit ▶ | |
| | Delete | |
| | Default | |

# Saved Tracks

**Saved Tracks** allows you to edit, delete, or change the default appearance of your saved tracks.

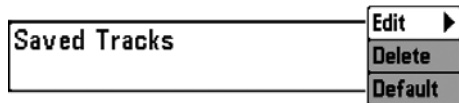## To view the Saved Tracks Submenu:

1.  Highlight Saved Tracks on the Navigation main menu.

2.  Press the RIGHT Cursor key to view the Saved Tracks submenu.

## The Saved Tracks Submenu contains the following menu choices:

**Edit** allows you to select a saved track and change its Name, Visibility, Style and Color. Select Edit and press the RIGHT Cursor key to display the list of saved tracks. Select the track you want to edit and press the RIGHT Cursor key. When the Edit Track dialog box appears, use the 4-WAY Cursor Control key to move between fields and make changes to the following categories:

> <u>Name:</u> Use the 4-WAY Cursor Control key to change the name of the saved track. Press the LEFT or RIGHT Cursor keys to move between name fields, and press the UP and DOWN Cursor keys to change the letter or number of each field. All upper and lower case letters are available, as well as digits 0-9 and some punctuation characters.

> <u>Visibility:</u> Press the UP or DOWN Cursor keys to select Hidden or Visible.

> <u>Style:</u>  Press the UP and DOWN Cursor keys to choose the track style (appearance).

> <u>Color:</u> After you've chosen a track style, the color field will appear. Press the Up and DOWN Cursor keys to choose a color or shade.

> *NOTE: You can exit these fields with the LEFT and RIGHT Cursor keys or by pressing the EXIT key. Select Save to confirm your changes.*

**Delete** allows you to delete a track from the list of saved tracks. Select Delete and press the RIGHT Cursor key to display the list of saved tracks. Select the track you want to delete and press the RIGHT Cursor key. You will be asked to confirm deletion before the track is permanently deleted.

**Default** sets the default appearance of the tracks you use. Select Default and press the RIGHT Cursor key to display the Default Track dialog box. Use the 4-WAY Cursor Control key to move between fields and change the settings for Visibility, Style and Color.

| Create ▶ |
|---|
| Edit |
| Delete |
| Cursor To |
| Go To |
| Target |
| Grid |
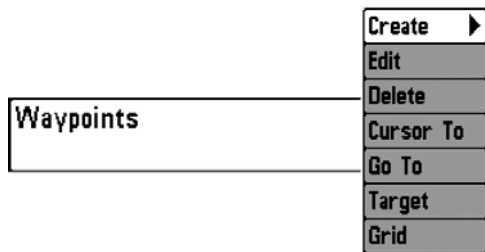
Waypoints

# Waypoints

**Waypoints** allows you to view the Waypoints submenu to easily manage the waypoints on your Fishing System.

**To view the Waypoints Submenu:**

1.  Highlight Waypoints on the Navigation main menu.
2.  Press the RIGHT Cursor key to view the Waypoints submenu.

**The Waypoints Submenu contains the following menu choices:**

**Create** allows you to create a new waypoint and edit it immediately. The current boat position will be used as the default, but you can set the coordinates to any valid position. The icon used to represent the waypoint in the Track and Combo Views can also be changed. Press the RIGHT Cursor key to create a waypoint and make changes to the following settings:

> Name: Press the LEFT or RIGHT Cursor keys to move between name fields, and press the UP and DOWN Cursor keys to change the letter or number of each field. All upper and lower case letters are available, as well as digits 0-9 and some punctuation characters.

> Latitude & Longitude: Press the LEFT or RIGHT Cursor keys to move between latitude or longitude fields, and press the UP and DOWN Cursor keys to change the coordinates of each field.

> Icon: Select the Icon field and use the Up and Down Cursor keys to scroll through a variety of icons to assign to your waypoint.

> *NOTE: You can exit these fields with the LEFT and RIGHT Cursor keys or by pressing the EXIT key. Select Save to confirm your changes.*

**Edit** allows you to choose from a list of saved waypoints, and then edit the Name and Position (Latitude and Longitude), as well as assign an Icon to represent the waypoint in the Track and Combo Views. Select Edit, and press the RIGHT Cursor key to display the saved Waypoints list. Use the UP and DOWN Cursor keys to choose a waypoint from the list, and press the RIGHT Cursor key to display the Edit Waypoint Dialog box. Refer to the details above to change waypoint settings.

**Delete** allows you to delete a waypoint from the list of saved waypoints. Select Delete, and press the RIGHT Cursor key to display the saved Waypoints list. Use the UP and DOWN Cursor keys to choose a waypoint, and press the RIGHT Cursor key. The Confirm dialog box will appear. To delete the waypoint, press the RIGHT Cursor key once more. To cancel deleting the waypoint, press the LEFT Cursor key.

**Cursor To** allows you to move the cursor quickly to a waypoint from the list of saved waypoints. Select Cursor To and press the Right Cursor key to view the saved waypoints list. Use the UP and DOWN Cursor keys to choose a waypoint from the list, and press the Right Cursor key again to initiate the cursor to that waypoint.

**Go To** allows you to select a waypoint and start navigation toward that waypoint, or add that waypoint to the end of the current route. Select Go To, and press the Right Cursor key to view the saved waypoints list, and use the UP and DOWN Cursor keys to choose a waypoint from the list. Press the Right Cursor key again to initiate navigation to the waypoint you choose.

**Target** allows you to apply a target to a waypoint selected from the list of waypoints. Select Target, and press the Right Cursor key to view the saved waypoints list. Use the UP and DOWN Cursor keys to choose a waypoint from the list. Press the Right Cursor key to apply a target to the waypoint you choose.

**Grid** allows you to apply a trolling grid to a waypoint selected from the list of waypoints. Select Grid, and press the Right Cursor key to view the saved waypoints list. Use the UP and DOWN Cursor keys to choose a waypoint from the list. Press the Right Cursor key to apply a trolling grid to the waypoint you choose.

*NOTE: Only one waypoint can have either a target or a grid at one time. If you apply a target or a grid to a new waypoint, the original waypoint will lose its target or grid.*

*NOTE: The spacing of the rings on the waypoint target and the spacing of the gridlines on the trolling grid is the same as the length of the scale bar on the left edge of the display. Zooming in or out will decrease or increase the spacing, respectively.*



## View Orientation

**View Orientation** allows you to select whether the Track and Combo Views should be drawn North-Up or Course-Up.

*NOTE: The View Orientation setting does not apply to the Bird's Eye View.*

**To change the View Orientation setting:**

1. Highlight View Orientation on the Navigation main menu.
2. Press the LEFT or RIGHT Cursor keys to change the View Orientation setting. (North-Up, Course-Up, Default = North-Up)
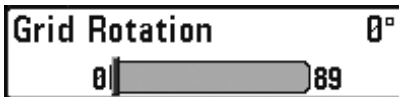
## North Reference

**North Reference** allows you to have bearings displayed with one of two orientations: True North or Magnetic North.

To change the North Reference setting:

1. Highlight North Reference on the Navigation main menu.

2. Press the LEFT or RIGHT Cursor keys to change the North Reference setting. (True, Magnetic, Default = True)

## Grid Rotation

**Grid Rotation** allows you to set the orientation of the trolling grid in degrees, where a setting of 0° displays a standard North, South, East, West alignment. See *Navigation Menu Tab: Waypoints* for more information on how to set a Grid.

To change the Grid Rotation setting:

1. Highlight Grid Rotation on the Navigation main menu.

2. Press the LEFT or RIGHT Cursor keys to change the Grid Rotation setting. (0° to 89°, Default = 0°)

## Trackpoint Interval

**Trackpoint Interval** allows you to select the time period between trackpoints. The current track can only contain up to 2000 trackpoints, so longer time periods cause the track to extend back further in time, but will be less detailed.

*NOTE: Trackpoint Interval works in conjunction with Track Min Distance. Both conditions must be met before a trackpoint is added to the current track.*

To change the Trackpoint Interval setting:

1. Highlight Trackpoint Interval on the Navigation main menu.

2. Press the LEFT or RIGHT Cursor keys to change the Trackpoint Interval setting. (1 second, 5 seconds, 10 seconds, 15 seconds, 30 seconds or 60 seconds, Default = 15 seconds)

*NOTE: During slow travel or drift, setting both Trackpoint Interval and Track Min Distance to small values will allow you to increase the track resolution.*

## Track Min Distance
## (Advanced)

**Track Min Distance** allows you to set a minimum distance of travel before a trackpoint is added to the track. The Track Min Distance menu choice is only available when User Mode is set to Advanced (see *The Menu System: User Mode*).

*NOTE: Track Min Distance works in conjunction with Trackpoint Interval. Both conditions must be met before a trackpoint is added to the current track.*

### To change the Track Minimum Distance setting:

1. Make sure you are in Advanced User Mode, then highlight Track Min Distance on the Navigation main menu.

2. Press the LEFT or RIGHT Cursor keys to change the Track Min Distance setting. (1 to 300 feet or 1 to 100 meters *[International Units Only]*, Default = 16 ft, 5 m)

*NOTE: During slow travel or drift, setting both Trackpoint Interval and Track Min Distance to small values will allow you to increase the track resolution.*

## Map Datum
## (Advanced)

**Map Datum** allows you to change the track plotter coordinate system used by the Fishing System to match those of a paper map. The Map Datum menu choice is only available when User Mode is set to Advanced (see *The Menu System: User Mode*).

### To change the Map Datum setting:

1. Make sure you are in Advanced User Mode, then highlight Map Datum on the Navigation main menu.

2. Press the LEFT or RIGHT Cursor keys to change the Map Datum setting. (Default = WGS 84)

## Course Projection Line

**Course Projection Line** allows you to display or hide an arrow extending from the bow of the boat that projects your current course, and shows where the boat will go if you continue on your present course.

To change the Course Projection Line setting:

1. Highlight Course Projection Line on the Navigation menu.

2. Press the LEFT or RIGHT Cursor keys to change the Course Projection Line setting. (Hidden, Visible, Default = Hidden)

## Delete All Nav Data (Advanced)

**Delete All Nav Data** allows you to delete all saved Tracks and Waypoints. This menu choice should be used with caution. The Delete All Nav Data menu choice is only available when User Mode is set to Advanced (see *The Menu System: User Mode*).

To Delete All Navigation Data:

1. Make sure you are in Advanced User Mode, then highlight Delete All Nav Data on the Navigation main menu.

2. Press the RIGHT Cursor key. The Confirm dialog box will appear. To cancel all navigation data, press the RIGHT Cursor key once more. To avoid canceling navigation data, press the LEFT Cursor key.

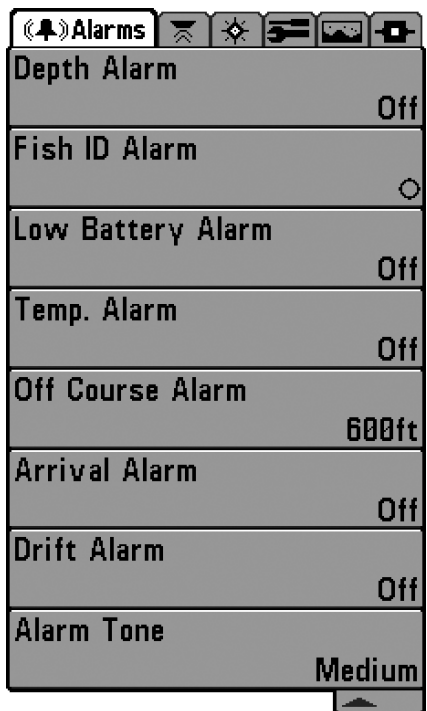## Continuous Navigation Mode

**Continuous Navigation Mode** allows you to continue to navigate and fish around a particular waypoint, even if you pass over it multiple times.

To Activate or Deactivate Continuous Navigation:

1. Highlight Continuous Navigation Mode on the Navigation main menu.

2. Press the LEFT or RIGHT Cursor keys to turn Continuous Navigation Mode On or Off. (Off, On, Default = Off)

| (♦)Alarms | ⊼ | ✦ | ⧉ | ▭ | ▱ |

**Depth Alarm**
Off

**Fish ID Alarm**
○

**Low Battery Alarm**
Off

**Temp. Alarm**
Off

**Off Course Alarm**
600ft

**Arrival Alarm**
Off

**Drift Alarm**
Off

**Alarm Tone**
Medium

*Alarms Menu*

# Alarms Menu Tab

From any view, press the MENU key twice to access the Main Menu System. The Alarms tab will be the default selection.

*NOTE: When an alarm is triggered, you can silence it by pressing any key. The alarm will be silenced, and will not be triggered again until a new instance of the alarm condition is detected.*

The following menu choices will be added to your Alarms Menu Tab when a Handheld GPS Receiver is connected to the Fishing System:

- Off Course Alarm
- Arrival Alarm
- Drift Alarm.

See your Fishing System Operations Manual for information on the standard Alarm Menu choices.

---

| Off Course Alarm | 300ft |
| Off ▮▭▭▭▭▭ | 3000 |

# Off Course Alarm

**Off Course Alarm** sounds when the boat has moved too far off course based on the menu setting when navigating. Off Course Alarm allows you to set how far the boat is allowed to move off course before the Off Course Alarm will sound.



*Off Course Limits*

*Arrival Alarm Circle*

| 003 | DTG 0.40sm | XTE | 42ft | BRG | 261°t |

72.7°F  5.6 mph  261 °t
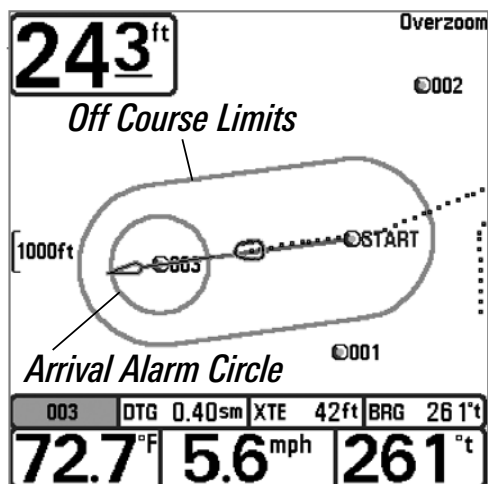
### To change the Off Course Alarm setting:

1. Highlight Off Course Alarm on the Alarms main menu.

2. Press the LEFT or RIGHT Cursor keys to change the Off Course Alarm setting. (Off, 25 to 3000 feet, 10 to 1000 meters *[International Models Only]*, Default = 300 ft, 100 m)
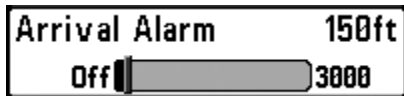
## Arrival Alarm

**Arrival Alarm** sounds when the boat has either exceeded the distance to the destination waypoint, or has entered the Arrival Alarm Circle, based on the menu setting when navigating. Arrival Alarm allows you to set how close the boat must be to the destination waypoint before the Arrival Alarm will sound.

### To change the Arrival Alarm setting:

1. Highlight Arrival Alarm on the Alarms main menu.
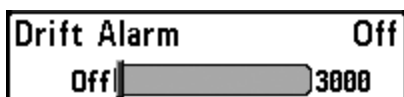
2. Press the LEFT or RIGHT Cursor keys to change the Arrival Alarm setting. (Off, 25 to 3000 feet, 10 to 1000 meters *[International Models Only]*, Default = 150 ft, 50 m)

## Drift Alarm

**Drift Alarm** sounds when the boat has exceeded the distance from the boat's anchored position, based on the menu setting. Drift Alarm allows you to set the size of a perimeter around the boat's anchored position; if the anchored boat drifts outside of that perimeter, the Drift Alarm will sound.

*Drift Alarm Perimeter*

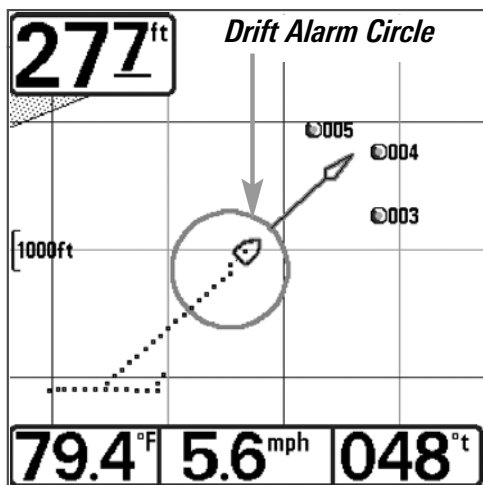### To change the Drift Alarm setting:

1. Highlight Drift Alarm on the Alarms main menu.

2. Press the LEFT or RIGHT Cursor keys to change the Drift Alarm setting. (Off, 25 to 3000 feet, 10 to 1000 meters *[International Models Only]*, Default = Off)

## Setup Menu Tab

| Setup | |
|---|---|
| Units - Depth | Feet |
| Units - Temp | °F |
| Units - Distance | Statute Miles |
| Units - Speed | mph |
| User Mode | Advanced |
| Language | English |
| Triplog Reset | |
| Restore Defaults | |
| Select Readouts | |
| Depth Offset | 0.0ft |
| Temp. Offset | 0.0° |
| Speed Calibration | 0% |
| Local Time Zone | EST (UTC-5) |
| Daylight Saving Time | Off |
| Position Format | dd°mm.mmm' |
| Time Format | 12-Hour |
| Date Format | mm/dd/yy |
| Digits Format | Small Tenths |
| NMEA Output | Off |

*Setup Menu Tab*

From any view, press the MENU key twice to access the tabbed Main Menu System, then press the RIGHT Cursor key until the Setup tab is selected.

*NOTE:  Menu choices will vary depending on system settings such as whether the unit is set for Advanced User mode and what accessories are attached to the unit.*

The following menu choices will be added to your Setup Menu Tab when a Handheld GPS Receiver is connected to the Fishing System:

- Units - Distance
- Units - Speed
- Triplog Reset
- Local Time Zone (Advanced)
- Daylight Saving Time (Advanced)
- Position Format (Advanced)
- Time Format (Advanced, International Only)
- Date Format (Advanced, International Only)
- NMEA Format.

See your Fishing System Operations Manual for information on the standard Setup Menu choices.
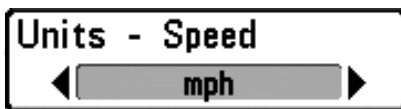
## Units - Distance

**Units - Distance** selects the units of measure for all distance-related readouts.

**To change the Units - Distance setting:**

1. Highlight Units - Distance on the Setup menu.

2. Press the LEFT or RIGHT Cursor keys to change the Units - Distance setting. (Domestic: Statute Miles, Nautical Miles; International: Meters/Kilometers, Meters/Nautical Miles, Feet/Statute Miles, Feet/Nautical Miles; Default: Domestic = Statute Miles, International = Meters/Kilometers)

## Units - Speed

**Units - Speed** selects the units of measure for speed-related readouts.

**To change the Units - Speed setting:**

1. Highlight Units - Speed on the Setup menu.

2. Press the LEFT or RIGHT Cursor keys to change the Units - Speed setting. (Domestic: mph, kts; International: kph, mph, kts. Default: Domestic = mph, International = kph)
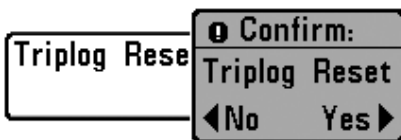
## Triplog Reset

**Triplog Reset** resets the Triplog to zero. The Triplog provides the following information: timer for elapsed time, distance traveled since last reset, and average speed.

*NOTE: See your **Fishing System Operations Manual: Select Readouts** to find out how to display Triplog information on the screen.*

**To Reset Triplog:**

1. Highlight Reset Triplog on the Setup menu.

2. Press the RIGHT Cursor key to initiate Triplog Reset.

3. The Confirm dialog box will appear. To reset the Triplog, press the RIGHT Cursor key once more. To cancel Reset Triplog, press the LEFT Cursor key.

## Local Time Zone
**(Advanced)**

**Local Time Zone** selects your time zone in reference to the time reported by the GPS receiver when Time+Date is selected as a Digital Readout on the Sonar View (see ***Select Readouts*** in your Fishing System Operation Manual). This menu choice is available only when in Advanced User Mode (see ***The Menu System: User Mode***.)

**To change the Local Time Zone:**

1. Make sure you are in Advanced User Mode, then highlight Local Time Zone on the Setup menu.

2. Press the LEFT or RIGHT Cursor keys to change the Local Time Zone (Default = EST [UTC-5] - Eastern Standard Time).

## Daylight Saving Time
**(Advanced)**

**Daylight Saving Time** adjusts the time display to account for local Daylight Saving Time. Selecting On adds one hour to the time display adjusted for your local time zone. Selecting Off leaves the time display as adjusted for your local time zone. This menu choice is available only when in Advanced User Mode (see ***The Menu System: User Mode.***)

**To change the Daylight Saving Time setting:**

1. Make sure you are in Advanced User Mode, then highlight Daylight Saving Time on the Setup menu.

2. Press the LEFT or RIGHT Cursor keys to turn Daylight Saving Time On or Off. (Off, On, Default = Off)

## Position Format
**(Advanced)**

**Position Format** selects the format of the latitude and longitude position display. This menu choice is available only when in Advanced User Mode (see ***The Menu System: User Mode.***)

**To change the Position Format setting:**

1. Make sure you are in Advanced User Mode, then highlight Position Format on the Setup menu.

2. Press the LEFT or RIGHT Cursor keys to change the Position Format. (dd.ddddd°, dd°mm.mmm', or dd°mm'ss", Default = dd°mm.mmm')

```
┌─────────────────────────────┐
│ Time Format                 │
│  ◀┤  12-Hour  ├▶            │
└─────────────────────────────┘
```
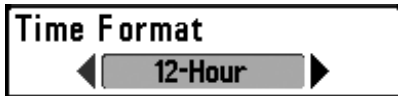
# Time Format
## (Advanced, International Only)

**Time Format** changes the time format used by the unit. This menu choice is available only when in Advanced User Mode (see *The Menu System: User Mode*) *International Models Only.* Time Format selects a 12 hour or 24 hour format for the time of day displayed when Time + Date is selected as a Digital Readout on the Sonar View (see *Select Readouts* in your Fishing System Operation Manual).

### To change the Time Format:

1. Make sure you are in Advanced User Mode, then highlight Time Format on the Setup menu.

2. Press the LEFT or RIGHT Cursor keys to change the Time Format. (12 hour, 24 hour, Default = 12 hour)

```
┌─────────────────────────────┐
│ Date Format                 │
│  ◀┤  mm/dd/yy  ├▶           │
└─────────────────────────────┘
```

# Date Format
## (Advanced, International Only)

**Date Format** changes the date format used by the unit. This menu choice is available only when in Advanced User Mode (see *The Menu System: User Mode*) *International Models Only*. Date Format selects the format for the date display when Time + Date is selected as a Digital Readout on the Sonar View. (see *Select Readouts* in your Fishing System Operation Manual).

### To change the Date Format:

1. Make sure you are in Advanced User Mode, then highlight Date Format on the Setup menu.

2. Press the LEFT or RIGHT Cursor keys to change the Date Format. (mm/dd/yy, dd.mm.yy or yy.mm.dd, Default = mm/dd/yy)
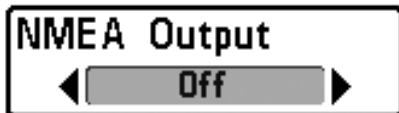
## NMEA Output
## (Advanced)

```
NMEA Output
◄   Off   ►
```

**NMEA Output** turns the NMEA* output on or off. This menu choice is available only when in Advanced User Mode (see *The Menu System: User Mode.*) NMEA Output should be turned On if you connect the NMEA Output wires of the GPS Receiver cable to another NMEA-compatible device, such as an autopilot.

*\*NMEA 0183 is a National Marine Electronics Association standard for data communication.*

### The following NMEA sentences are output:

DPT- Depth
MTW - Water Temperature
GLL - Lat/Lon Position
GGA - GPS Fix Data
RMC - Recommended Minimum Specific GNSS Data
VTG - Course Over Ground and Ground Speed
ZDA - Time and Date

### When navigating, the following NMEA sentences are also output

### when NMEA Output is turned On:

APB - Autopilot Sentence B
BWR - Bearing and Distance to Waypoint
RMB - Recommended Minimum Navigation Info

### To turn NMEA Output on or off:

1. Make sure you are in Advanced User Mode, then highlight NMEA Output on the Setup menu.

2. Press the LEFT or RIGHT Cursor keys to change the NMEA Output to On or Off (Off, On, Default = Off)

# Accessories Menu Tab

From any view, press the MENU key twice to access the tabbed Main Menu System, then press the RIGHT Cursor key until the Accessories tab is selected.

If no accessories are attached to the Accessory Bus, no accessory menu choices will appear under the Accessories tab.  If an accessory is attached, however, additional menu choices that support the accessory will be added automatically.  See the Operations Manual that is included with your accessory for detailed information.

*Accessories Menu Tab*
*(no accessories attached)*

*Accessories Menu Tab*
*(with accessories attached)*

*NOTE: Accessories to enable WeatherSense® and the SmartCast® Wireless Sonar Link require separate purchases.  You can visit our website at www.humminbird.com or contact our Customer Resource Center at 1-800-633-1468 for additional details.*

# Troubleshooting

Before contacting the Humminbird® Customer Resource Center, please read the following section. Taking the time to review these troubleshooting guidelines may allow you to solve a performance problem yourself, and therefore avoid sending your unit back for repair.

## Fishing System Doesn't Power Up

If your Fishing System doesn't power up, use the Installation Guide that also comes with it for specific confirmation details, making sure that:

- the power cable is properly connected to the Fishing System control head,
- the power cable is wired correctly, with red to positive battery terminal and black to negative terminal or ground
- the fuse is operational
- the battery voltage of the power connector is at least 10 Volts

Correct any known problems, including removing corrosion from the battery terminals or wiring, or actually replacing the battery if necessary.

## Fishing System Defaults to Simulator with a Transducer Attached

A connected and functioning transducer will cause the newly-started Fishing System to go into Normal operating mode automatically. If, when you power up the Fishing System, it goes into Simulator mode automatically, even though a transducer is already connected, this means that the control head is not detecting the transducer. Perform the following troubleshooting tasks:

- Using the Installation Guide that also comes with your Fishing System, check to make sure that the transducer cable is securely connected to the Fishing System. Reconnect if necessary, and power up the Fishing System again to see if this fixes the problem.
- Replace the non-functioning transducer with a known good transducer if available and power up the control head again.
- Check the transducer cable. Replace the transducer if the cable is damaged or corroded.

# Display Problems

There are several main conditions or sources of possible interference that may cause problems with the quality of the information displayed on the control head. Look in the following table for some symptoms of display problems and possible solutions:

| Problem | Possible Cause |
|---|---|
| **The control head loses power at high speeds.** | If the power output of your boat's engine is unregulated, the control head may be protecting itself using its over-voltage protection feature. Make sure the input voltage does not exceed 20 Volts. |
| **When the boat moves at higher speeds, the bottom disappears or suddenly weakens, or the display contains gaps.** | The transducer position may need to be adjusted. A mix of air and water flowing around the transducer (cavitation) may be interfering with the interpretation of sonar data. See your Installation Guide for suggestions on adjusting the transducer position.<br><br>Electrical noise from the boat's engine may be interfering with sonar reception. See ***Finding the Cause of Noise*** for more information. |
| **There are no fish detected, even when you know they are in the water under the boat, or sonar readings seem weak or faulty.** | Sonar readings may be affected if the transducer is not positioned correctly (i.e. mounted at an angle, not straight down), or there is some kind of mechanical interference, either because it is mounted inside a hull that is too thick for proper sonar transmission, the bond between the transducer and the hull is not airtight, or because the transducer is dirty. Check with your Installation Guide for guidance on re-positioning the transducer, and make sure the transducer is clean.<br><br>Low battery voltage may be affecting the power of signal transmission.<br><br>Electrical noise from the boat's engine may be interfering with sonar reception. See ***Finding the Cause of Noise*** for more information. |

# Finding the Cause of Noise

Electrical noise usually affects the display with many black dots at high speeds, and high sensitivity readings. One or more of the following sources can cause noise or interference:

| Possible Source of Noise | Isolation |
| --- | --- |
| Other electronic devices | Turn off any nearby electronic devices to see if the problem goes away, then turn them on one at a time to see if the noise re-appears. |
| The boat's engine | To determine whether the boat's engine is the source of the noise, increase the RPMs while the boat is in neutral and stationary to see if the noise increases proportionately; if noise appears when you rev the engine, the problem could be the spark plugs, alternator, or tachometer wiring. Replace the spark plugs with resistor plugs, install an alternator filter, or route the control head power and transducer cables away from the engine wiring. |
| Cavitation from the boat's propeller | Turbulence created by the propeller can cause noise; make sure the transducer is mounted at least 15″ (38 cm) from the propeller, and that the water flows smoothly over the face of the transducer at all times. |

# Fishing System Accessories

Fishing System Accessories customize the Fishing System to your needs and enable you to stay on the edge of new technology. When an accessory is connected to the Fishing System, additional menus and readouts are added automatically to the Main Menu System.

**QuadraBeam PLUS™ transducer:** purchase and connect the QuadraBeam PLUS™ transducer to your Fishing System to access specialized QuadraBeam PLUS™ functions such as two 45° fan-shaped 35° 455 kHz Side Structure locating sonar beams to spot fish, bait and structure to the left and right of the boat over an area of the bottom that's always equal to twice your depth, for a continuous 90° of uninterrupted side to side coverage to 160 feet.

**WeatherSense® Fishing Condition Monitor:** purchase and plug in the WeatherSense® accessory to your Fishing System to obtain barometric pressure readouts and trend data in real time.

**Wireless Sonar Link (WSL)** purchase the Wireless Sonar Link (WSL) accessory to receive remote sonar signals from a SmartCast® Remote Sonar Sensor (RSS). Radio signals from the RSS are received by the WSL and transmitted over the Accessory Bus to the Fishing System.

**PC Connect Cable:** Purchase the PC Connect Cable to connect the Fishing System to a PC in order to upload product software updates and new features obtained from **www.humminbird.com**. This accessory requires the MSWindows-compatible HumminbirdPC™ software downloaded from our website to your PC in order to communicate with the Fishing System.

**Universal Sonar 2:** Your Fishing System supports Universal Sonar 2, a state-of-the-art, integrated and protected transducer that is built into the lower unit of Minnkota trolling motors. With Universal Sonar 2, all wiring is concealed inside the indestructible composite shaft—out of sight and out of harm's way, with no clamps, ties, or exposed wires. Universal Sonar 2 features new temperature sensing and the performance of DualBeam PLUS™ technology (available with all Humminbird® DualBeam PLUS™ models). An expanded view and greater bottom detail gives you a totally new perspective of the water below, along with optimal sonar performance to help you find fish.

**Downriggers** are the key to catching fish you otherwise couldn't even touch. And now Humminbird's **CannonLink™** Downrigger Controller makes operation of up to six Cannon™ Mag 20 DT or Mag 20 DT/HS downriggers incredibly easy. Using the controls on your Fishing System, deploy or retrieve downriggers, hold a specific distance off the bottom, cycle downriggers between two depths, and adjust the Positive Ion Control. Even see temperature and water clarity at depth and speed at the ball right on-screen when using the Cannon™ Speed-n-Temp. You'll never be shorthanded again, just make adjustments from the helm, while your mate rigs the lines and brings in the fish!

With the new **InterLink™** Network Connection, you can now share GPS position, waypoints, routes and your current track between two Humminbird® Fishing Systems in real time. Mark a waypoint at the console, and it's instantly available on the second unit. No matter where you're at on the boat, you'll have access to your critical fishing and navigation information. Plus, daisy chain InterLink™ with other System Modules and you'll have a network that lets you share digital data around the boat. It's a simply, clearly, better networking solution!

Be sure to check out our website **www.humminbird.com** for additional new and exciting accessories to grow your Fishing System.

> *NOTE: Each accessory requires a separate purchase, and accessory availability depends on the model you own. You can visit our website at **www.humminbird.com** or contact our Customer Resource Center at **1-800-633-1468** for additional details.*

# 1-Year Limited Warranty

We warrant the original retail purchaser that products made by Humminbird® have been manufactured free from defects in materials and workmanship. This warranty is effective for one year from the date of original retail purchase. Humminbird® products found to be defective and covered by this warranty will be replaced or repaired free of charge at Humminbird's option and returned to the customer freight prepaid. Humminbird's sole responsibility under this warranty is limited to the repair or replacement of a product that has been deemed defective by Humminbird®. Humminbird® is not responsible for charges connected with the removal of such product or reinstallation of replaced or repaired parts.

This warranty does not apply to a product that has been:

- Improperly installed;

- Used in an installation other than that recommended in the product installation and operation instructions;

- Damaged or has failed because of an accident or abnormal operation;

- Repaired or modified by entities other than Humminbird®.

Please retain your original receipt as a proof of the purchase date. This will be required for in-warranty service.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, OBLIGATIONS OR LIABILITIES ON THE PART OF HUMMINBIRD® AND WILL BE THE CUSTOMER'S EXCLUSIVE REMEDY, EXCEPT FOR ANY APPLICABLE IMPLIED WARRANTIES UNDER STATE LAW WHICH ARE HEREBY LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL PURCHASE. IN NO EVENT WILL HUMMINBIRD® BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY RELATING TO THE PRODUCTS.

Some states do not allow limitations on an implied warranty, or the exclusion of incidental or consequential damages, so the above exclusions may not apply to you. You may also have other rights, which vary from state to state.

# Humminbird® Service Policy

Even though you'll probably never need to take advantage of our incredible service policy, it's good to know that we back our products this confidently. We do it because you deserve the best. We will make every effort to repair your unit within three business days from the receipt of your unit at our factory. This does not include shipping time to and from our factory. Units received on Friday are typically shipped by the following Wednesday, units received Monday are typically shipped by Thursday, etc.

All repair work is performed by factory-trained technicians to meet exacting factory specifications. Factory-serviced units go through the same rigorous testing and quality control inspections as new production units.

After the original warranty period, a standard flat rate service charge will be assessed for each repair (physical damage and missing parts are not included).

Any repairs made after the original warranty will be warranted for an additional 90 days after service has been performed by our factory technicians. You can contact our Customer Resource Center or visit our website to verify the flat rate repair fee for your product (visit the Product Support section):

**http://www.humminbird.com**

We reserve the right to deem any product unserviceable when replacement parts are no longer available or impossible to obtain. This Service Policy is valid in the United States only. This applies only to Humminbird® products returned to our factory in Eufaula, Alabama. This Service Policy is subject to change without notice.

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**DOMESTIC (USA) CUSTOMERS:**

**PLEASE DO NOT RETURN THIS PRODUCT TO STORE FOR SERVICE**

For all technical issues please call **1-800-633-1468**

Or visit **www.humminbird.com**, click **SUPPORT**

Please reference product serial number and
model number when contacting Humminbird®.

# Returning Your Unit for Service

Before sending your unit in for repair, please contact the factory, either by phone or by email, to obtain a Repair Authorization Number for your unit.

*NOTE: Please do not return your Humminbird® to the store for service.*

Please have your product model name and serial number available before calling the factory. If you contact the factory by e-mail, please include your product model name and serial number in the e-mail, and use Request for Repair Authorization Number for your e-mail subject header. You should include your Repair Authorization Number in all subsequent communications about your unit.

## For IN-WARRANTY service, complete the following steps:

- Obtain a Repair Authorization Number from the Humminbird® Customer Resource Center.

- Tag product with your name, street address, phone number and your assigned Repair Authorization Number.

- Include a brief written description of the problem.

- Include a copy of your receipt (to show proof and date of purchase).

- Return product freight prepaid to Humminbird®, using an insured carrier with delivery confirmation.

## For OUT-OF-WARRANTY service, complete the following steps:

- Obtain a Repair Authorization Number from the Humminbird® Customer Resource Center.

- Include payment in the form of credit card number and expiration date, money order or personal check. Please do not send cash.

- Tag product with your name, street address, phone number and your assigned Repair Authorization Number.

- Include a brief written description of the problem.

- Return product freight prepaid to Humminbird®, using an insured carrier with delivery confirmation.

# Notes

Contact the Humminbird® Customer Resource Center
in any of the following ways:

By Telephone
(Monday - Friday 8:00 a.m. to 4:30 p.m. Central Standard Time):

**1-800-633-1468**

By e-mail
(typically we respond to your e-mail within three business days):

**cservice@johnsonoutdoors.com**

For direct shipping, our address is:

**Humminbird
Service Department
678 Humminbird Lane
Eufaula, AL  36027 USA**

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